BAY AREA WATER SUPPLY AND CONSERVATION AGENCY BOARD OF DIRECTORS MEETING

September 9, 2022

Correspondence and media coverage of interest between August 22, 2022 and September 7, 2022

<u>Correspondence</u>

From: To: Date: Subject:	Peter Drekemeier Board Chair, Gustav Larsson and BAWSCA Board of Directors September 1, 2022 Design Drought Workshop
From: To:	Dennis Herrera, SFPUC General Manager The Hon. Kit Miyamoto, Chairman, Seismic Safety Commission Mr. Stefan Cajina, Chief, State Water Resources Control Board
Date: Subject:	August 19, 2022 Wholesale Regional Water System Security and Reliability Act 2022 Notice of Changes to the San Francisco Public Utilities Commission Water System Improvement Program (<u>Click here</u> for Report attachment)
From: To: Date: Subject:	Los Vaqueros Reservoir Expansion Project CCWD Board August 12, 2022 Monthly Report
	Press Release
From: Date: Press Release:	East Bay Municipal Utility District August 30, 2022 Bay Area Water Agencies and State Leaders Urge More Conservation Outdoors as California Prepares and Braces for Fourth Dry Year
From: Date: Press Release:	California Water Service Group August 30, 2022 Cal Water Applauds Passage of Important Water Conservation Bill SB 1469 (Bradford/Becker)
From: Date: Press Release:	ACWA August 24, 2022 Governor Urged To Sign Bill To Reinstate Tax Exemption For Turf Replacement Rebates
From: Date: Press Release:	Restore the Delta August 23, 2022 CA Tribes and Delta Environmental Justice groups ask State Water Board to Reconsider Delta Plan
From: Date: Press Release:	East Bay Municipal Utility District August 11, 2022 EBMUD joins State effort to enhance Bay-Delta ecosystem

<u>Media Coverage</u>

Water Policy

Date:	September 7, 2022
Source:	Modesto Bee
Article:	Diverters of Tuolumne River water suddenly see hope for state agreement on fish flows
Date:	September 6, 2022
Source:	Turlock Journal
Article:	TID moves closer to voluntary agreement with state water board
Drought:	
Date:	September 6, 2022
Source:	LA Times
Article:	15-day watering ban begins for parts of L.A. County
Date:	September 1, 2022
Source:	Sacramento Bee
Article:	California's water year is nearly over. Here's where our reservoirs stand amid drought
Date: Source: Article:	August 30, 2022 CBS Bay Area Water agency experts predict a fourth year of drought, urge Bay Area residents to conserve more
Date:	August 28, 2022
Source:	CNN
Article:	The fight against drought in California has a new tool: The restrictor
Date:	August 27, 2022
Source:	KQED
Article:	7 states and federal government lack direction on cutbacks from the Colorado River
Date:	August 27, 2022
Source:	Palo Alto Online
Article:	Valley Water discusses drought solutions during water summit
Date:	August 25, 2022
Source:	LA Times
Article:	Most Californians view state's water shortage as extremely serious, poll finds
Date:	August 22, 2022
Source:	Mercury News
Article:	Can area's drought, housing cohabitate?
Date:	August 18, 2022
Source:	Mercury News
Article:	Does the Bay Area have enough water to build housing during the California drought?

Water Supply Management:

Date:	September 1, 2022
Source:	The Independent
Article:	Tuolumne River Trust Questions Worst-Case Drought Scenario Plan
Date:	August 30, 2022
Source:	CalMatters
Article:	Newsom's water strategy needs to go a step further
Date:	August 29, 2022
Source:	California Trout
Article:	California's Large Reservoirs Need Better Management
Date:	August 25, 2022
Source:	Roll Call
Article:	Western drought funding pushes feds and states to cooperate
Date:	August 25, 2022
Source:	ABC 10
Article:	Drought conditions static in California's state's reliance on groundwater grows
Date: Source: Article:	August 23, 2022 The San Francisco Standard Is SF Hoarding Water? One Environmental Group Wants the city To Get Real About Its Planning

Water Infrastructure:

Date:	August 28, 2022
Source:	San Jose Spotlight
Article:	Santa Clara County dam faces growing opposition
Date:	August 26, 2022
Source:	SF Chronicle
Article:	Why California's largest reservoir in nearly 50 years may be derailed by water shortages
Date: Source: Article:	August 23, 2022 Sacramento News & Reviews State unveils latest environmental documents meant to push controversial Delta Tunnel ahead

Miscellaneous:

Date:	September 7, 2022
Source:	CNN
Article:	We got rid of the grass to help keep the planet green
Date:	September 6, 2022
Source:	Discover
Article:	5 Ancient Societies that Collapsed When the Water Ran Dry

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Lourdes Enriquez

From:	Peter Drekmeier <peter@tuolumne.org></peter@tuolumne.org>
Sent:	Thursday, September 1, 2022 10:10 AM
То:	bawscaboardofdirectors
Subject:	Design Drought Workshop

Dear Chair Larsson and BAWSCA Board Members:

In case you didn't get a chance to watch last week's SFPUC workshop on the Design Drought, the recording is posted at <u>https://sanfrancisco.granicus.com/player/clip/41900?view_id=22&redirect=true&h=087062ed80a1dea47c9be980b598239b</u> (click on Item 7).

There were a couple of good follow-up articles yesterday that might be of interest.

Drought Plan Means Full Lake, Empty River, San Francisco Estuary Magazine – <u>https://archive.estuarynews.org/drought-plan-means-full-lake-empty-river/</u>

Tuolumne River Trust Questions Worst-Case Drought Scenario Plan, The Independent – <u>https://www.independentnews.com/news/regional_and_ca/tuolumne-river-trust-questions-worst-case-drought-scenario-plan/article_294c6722-2943-11ed-a79b-379b784ac342.html</u>

Happy September.

-Peter

Peter Drekmeier Policy Director Tuolumne River Trust peter@tuolumne.org (415) 882-7252 (This page was intentionally left blank)



August 19, 2022

The Honorable Dr. Kit Miyamoto, Chairman Alfred E. Alquist Seismic Safety Commission 2945 Ramco Street, Suite 195 West Sacramento, CA 95691

Mr. Stefan Cajina, Chief North Coastal Section, Division of Drinking Water State Water Resources Control Board 850 Marina Bay Parkway, Bldg P, Second Floor Richmond, CA 94804

Subject: Wholesale Regional Water System Security and Reliability Act 2022 Notice of Changes to the San Francisco Public Utilities Commission Water System Improvement Program

Dear Chairman Miyamoto and Mr. Cajina:

Pursuant to the reporting requirements of the Wholesale Regional Water System Security and Reliability Act (Water Code § 73500 et seq.), the San Francisco Public Utilities Commission (SFPUC) respectfully submits the attached 2022 Water System Improvement Program (WSIP) Notice of Change Report, describing changes adopted by the SFPUC Commission (Commission) on April 26, 2022 to project schedules, overall program schedule, project budgets, and project scopes of the SFPUC WSIP, referred to herein as the March 2022 Revised WSIP.

The SFPUC last adopted program-wide revisions to the WSIP, including revisions to the program scope, schedule, and budget, on April 10, 2018. Subsequently, on April 14, 2020, the SFPUC adopted revisions to the schedule, but not the budget or scope, of five (5) WSIP projects and extended the overall WSIP completion date by sixteen (16) months, from December 30, 2021 to May 5, 2023. The SFPUC has made significant progress towards the implementation of the WSIP since the Commission last adopted revisions to the program. Between March 2020 and March 2022, the last project of the Local WSIP, Lake Merced Pump Station Improvements, was completed. Four Regional WSIP projects were completed, for a total of forty-six (46) out of fifty-two (52) Regional WSIP projects completed. Of the forty- three (43) Regional WSIP projects with specific level of service (LOS) goals, forty-one (41) have achieved their LOS goals to date.

On April 26, 2022, the Commission adopted the following changes to the WSIP.

Services of the San Francisco Public Utilities Commission

OUR MISSION: To provide our customers with high-quality, efficient and reliable water, power and sewer services in a manner that values environmental and community interests and sustains the resources entrusted to our care.

London N. Breed Mayor

> Anson Moran President

Newsha Ajami Vice President

Sophie Maxwell Commissioner

Tim Paulson Commissioner

Dennis J. Herrera General Manager



<u>Schedule Changes</u>: Schedule revisions were adopted for four (4) active projects, three (3) support projects, and the Program Management Project as follows:

- 1. Regional Groundwater Storage and Recovery Project: Extend completion by 61 months to February 1, 2027;
- WSIP Closeout Sunol Valley: Extend completion by 12 months to June 30, 2022;
- 3. Alameda Creek Recapture Project: Extend completion by 12 months to May 5, 2024;
- 4. Calaveras Dam Replacement Project: Extend completion by 12 months to March 31, 2022;
- 5. Long Term Mitigation Endowment: Extend completion by 36 months to October 1, 2024;
- 6. Bioregional Habitat Restoration: Extend completion by 36 months to October 1, 2024;
- 7. Watershed and Environmental Improvement Program: Extend completion by 18 months to June 30, 2022; and
- 8. Program Management Project: Extend Completion by 61 months to February 1, 2027.

These schedule changes, as adopted, extend the overall WSIP completion date to February 1, 2027, forty-five (45) months later than the previously approved program completion date of May 5, 2023.

Budget Changes: Both budget increases and budget reductions at the project level were adopted. The project with the largest budget increase is Regional Groundwater Storage and Recovery. The March 2022 Revised WSIP Regional Groundwater Storage and Recovery budget is \$19.6M higher than the 2018 approved project budget. The project with the largest budget reduction is Calaveras Dam Replacement, with a budget reduction of \$29.0M. There is no change to the total forecast budget of the Regional Water System Improvement Program projects at \$3,803.1M; the overall WSIP program budget remains at \$4,787.8M. The four (4) projects with budget changes and the budget change for the Program Management Project are as follows:

- 1. Regional Groundwater Storage and Recovery: Increased budget by \$19.6M for a total of \$158.4M.
- 2. Alameda Creek Recapture: Increased budget by \$10.0M for a total of \$44.0M.
- 3. Calaveras Dam Replacement Project: Decreased budget by \$29.0M for a total of \$794.1M.
- 4. Bioregional Habitat Restoration: Decreased budget by \$1.2M for a total of \$92.2M.
- 5. Program Management Project: Increased budget by \$4.6M for a total of \$117.3M.

Scope Changes: The project scopes remain the same as those last approved in April 2018, except for minor scope refinements proposed for the following three (3) projects:

- 1. CUW30103: Regional Groundwater Storage and Recovery Project
- 2. CUW39401: Watershed and Environmental Improvement Program Project
- 3. CUWSVI: WSIP Closeout Sunol Valley Region

No regional projects have been deleted from the WSIP since 2018 and there are no project name changes. There is one new sub-project in the WSIP Closeout Project – Sunol Region.

The reasons for the individual project schedule extensions, budget revisions, and minor scope revisions for the projects noted above, are detailed in the attached 2022 Notice of Changes Report.

On March 25, 2022, the SFPUC notified the Bay Area Water Supply & Conservation Agency (BAWSCA) that the Commission would be considering these changes proposed to the WSIP at a public hearing on April 26, 2022. At the SFPUC's request, BAWSCA forwarded the proposal to the 26 wholesale agencies it represents to comply with the change notice requirements of the Wholesale Regional Water System Security and Reliability Act. On March 25, 2022, the SFPUC also posted a Notice of Public Hearing on the proposed changes to the SFPUC website. On April 26, 2022, following a 30-day review period and opportunity for public comment, the Commission, by Resolution No. 22-0080, adopted the proposed schedule, budget, and scope changes. Both the March 2022 Notice of Public Hearing and SFPUC Resolution No. 22-0080 are included as appendices to the attached report

To facilitate distribution, this report is also available in the Reports section of the WSIP webpage at <u>https://sfpuc.org/construction-contracts/water-infrastructure-improvements</u>.

Please do not hesitate to contact me at (415) 554-1600 if you have questions or need additional information.

Sincerely,

Dennis J. Herrera, General Manager

Attachment: Wholesale Regional Water System Security and Reliability Act 2022 Notice of Changes Report, Water System Improvement Program

CC:

Cindy Silva – Vice Chair, Alfred E. Alquist Seismic Safety Commission Salina Valencia – Acting Executive Director, Alfred E. Alquist Seismic Safety

August 19, 2022

Wholesale Regional Water System Security and Reliability Act 2022 Notice of Changes to San Francisco Public Utilities Commission Water System Improvement Program Page 4

Commission

Jia Wang-Connelly, Alfred E. Alquist Seismic Safety Commission Fred Turner - Structural Engineer, Alfred E. Alquist Seismic Safety Commission Marco Pacheco – San Francisco District Engineer, State Water Resources Control Board Vlad Rakhamimov - Staff Engineer, North Coastal Section, Division of Drinking Water - State Water Resources Control Board Darrin Polhemus, Deputy Director, division of Drinking Water, State Water Resources Control Board Daniel Newton – Assistant Deputy Director, Northern California Drinking Water Field Operations Branch Nicole Sandkulla - Chief Executive Officer and General Manager, BAWSCA Tom Francis – Water Resources Manager, BAWSCA

cc: <u>(without attachments)</u> President Anson Moran Vice President Newsha Ajami Commissioner Sophie Maxwell Commissioner Tim Paulson The Honorable Assembly Member Rudy Salas, Chair, California State Assembly - Joint Legislative Audit Committee The Honorable Senator John Laird, Vice-Chair, California State Senate - Joint Legislative Audit Committee



AUGUST 12, 2022

UPCOMING ACTIVITIES

August 18 at 10:00 a.m. – JPA O&E Committee Meeting

August 24 at 10:00 a.m. – JPA Communications and Outreach Committee Meeting

August 25 at 1:00 p.m. – JPA Finance Committee Meeting

August 31 at 6:30 p.m. – Special Joint CCWD & DWD Meeting – LVE Update

September 8 at 3:30 p.m. – CCWD O&E Committee Meeting – LVE Facilities Update

September 14 at 9:30 a.m. – JPA Regular Board Meeting

Note: All LV JPA meetings via Zoom

UPCOMING LAP BOARD COORDINATION

TBD – Valley Water Storage Committee

ADDITIONAL PROJECT INFO

https://losvaquerosjpa.com/ https://www.ccwater.com/lvstudies https://www.usbr.gov/mp/vaqueros/ https://cwc.ca.gov/Water-Storage/WCID Project Powiew

Storage/WSIP-Project-Review-Portal/All-Projects/Los-Vaqueros-Reservoir-Expansion-Project

MONTHLY REPORT

FUNDING

The FY22 Continuing Resolution that went into effect September 30, 2021 included \$50 million in Federal funding for the Project. This is in addition to the \$14 million that was appropriated in FY21. A funding agreement with Reclamation for the pre-construction cost share (approximately \$7 million) was previously executed and the first invoice and progress report are planned to be submitted by the end of the month.

Future Federal funding requests include the remainder of the maximum federal share of 25 percent of the total project cost (approximately \$160 million). Some portion of the federal funding share may be available in the Bipartisan Infrastructure Law (the Infrastructure Investment and Jobs Act that was signed on November 15, 2021).

The Project qualified for funding under the Water Storage Investment Program and received an adjusted Maximum Conditional Eligibility Determination of \$477,558,343 from the California Water Commission (CWC) on March 16, 2022. This amount reflects a recent inflation adjustment of 1.5 percent and an increase in over \$7 million from the previous award. An amendment to the Early Funding Agreement with the CWC to reflect the increased award and align with the current project schedule was approved at the CWC meeting on May 18, 2022. Invoices are continuing to be submitted to the California Water Commission (CWC) monthly.

Amendment No. 3 to the Multi-party Cost Share Agreement was previously executed and provides local funding through December 2022. The second round of invoices of \$448,560 per agency were sent in July and some partner payments have been received. All partner accounts are currently in good standing.

The following chart provides an overview of the District managed FY22 expenditures and funds received through the end of June 2022. Fund 60 remains "in the black" with a cash balance of approximately \$1.0 million. Funding status is consistent with the Draft Treasurer's Monthly Report reviewed with the Los Vaqueros Reservoir Joint Powers Authority (JPA) at the August 10, 2022 Regular Board Meeting.



JPA BOARD OF DIRECTORS MEETING

On August 10 the JPA Board of Directors met via Zoom. The JPA Board held a closed session to conduct interviews for Executive Director recruitment. The next monthly JPA Board Meeting has been scheduled for September 14 and the meeting agenda packet will be distributed to JPA Directors and Alternate Directors on Thursday, September 8 and posted to the JPA website on Friday, September 9. The October 12 JPA Board of Directors meeting is tentatively being planned to take place in-person at the Grassland Water District office in Los Banos with a field trip to tour the wildlife refuges on the agenda. Additional details regarding the field trip and logistics will be provided when available.

PERMITTING

U.S. Fish and Wildlife Service (USFWS) continues work on the Biological Opinion for terrestrial species. USFWS reviewed District responses to comments on the Compensatory Mitigation Plan which supports the federal and state Endangered Species Act permitting processes and had no additional comments. USFWS Migratory Bird Program staff continue drafting an Environmental Assessment for their eagle take permit action. California Department of Fish and Wildlife (CDFW) continues work on the Incidental Take Permit for terrestrial species and Lake and Streambed Alteration Agreement. The second draft of the Incidental Take Permit for aquatic species has been reviewed by CDFW, District staff are addressing comments. Central Valley Regional Water Quality Control Board (CVRWQCB) issued it's Section 401 permit on June 30, 2022. The U.S. Army Corps of Engineers (USACE) continues work on its Section 404 permit which will be issued after Reclamation issues its Record of Decision. A Delta Plan Consistency Package has been prepared and will be submitted in August or September after completing the ongoing outreach to key stakeholders.

DESIGN & ENGINEERING

The District issued the notice to proceed to the contractor to complete the Transfer Pipeline Inspection, which will inspect the interior of the inlet/outlet pipeline to the Los Vaqueros Dam. Inspections to confirm the pipeline conditions meet the pressure requirements of the increased water level of the expanded reservoir require shutdown of the pipeline and effectively removing the LV Reservoir from operation. Inspection work planned to begin in September likely requires operation of the CCWD/EBMUD intertie to maintain water quality for District customers.

The District continues to work with regional transportation agencies to work through potential conflicts with future planned highway improvements. Work with conservancies and resource agencies to confirm the alignment through lands protected with conservation easements continues to be on hold until September, when resources are available to develop a roadmap for approvals. An amendment to the consulting services agreement with Carollo Engineers was approved on August 3, which includes progressively detailed design and field investigations for the pipeline once the final alignment has been selected. A topographic survey of the pipeline alignment is planned for late August. 60-percent design of the Turn-In has been prepared and is under review.

Design of Pumping Plant No. 1 Replacement continues to progress toward 60-percent. A physical model of the pump station is under construction to test the hydraulics, consistent with industry standards for large pump stations. The testing plan and results will be peer reviewed. An update on PP1 Replacement was recently provided to the Design Review Team.

Plans and specifications for the dam expansion have been submitted for review by the California Division of Safety of Dams (DSOD), along with various technical memoranda. With these submissions, the District will request approval to construct from DSOD, which is needed to satisfy the requirements of the CWC Final Award Hearing.

The District interviewed consultants to provide Capital Project Management Support services on July 29, with award of a final agreement with the selected consultant planned for September. (This page was intentionally left blank)



August 30, 2022

Bay Area Water Agencies and State Leaders Urge More Conservation Outdoors as California Prepares and Braces for Fourth Dry Year

Experts highlight drought-tolerant landscaping and resources to help customers reduce outdoor water use

Fremont, CA – State leaders and Bay Area water agencies gathered today at a drought-tolerant garden to highlight conservation efforts currently underway and discuss important outdoor water saving devices and practices that can collectively save thousands of gallons of water for Californians.

California Natural Resources Agency Secretary Wade Crowfoot joined water agency leaders at the Quarry Lakes Demonstration Garden to announce resources to assist and inspire Bay Area residents in their efforts to reduce outdoor water use as California prepares for a fourth dry year amid extreme drought.

"Drought across the west is bad and getting worse. In response, we're taking actions to stretch our water supplies and deliver projects that help us adjust to a hotter, drier climate," said Secretary Crowfoot. "Thanks to our local partners and leaders in the Bay Area, we are making progress to conserve water and improve water efficiency. It's time to double down on these critical efforts."

For the period of January to June 2022, Bay Area residents reduced their water use to an average of 60 gallons per person per day compared to the state average of 82. More work is needed, however, to curb daily water usage, especially outdoors where most water waste occurs. Water agency leaders serving the Bay Area expressed the need for continued partnerships and urgent action by all residents to build drought resilience both in the near- and long-term.

"Regional and state partnerships like we have help save our water as we manage through drought and adapt to a changing climate," said ACWD General Manager Ed Stevenson. "Residents and businesses in Alameda County Water District and throughout the Bay Area have done a very good job of conserving water during this extreme drought and we're better prepared if next year is dry. Still, we cannot take our foot off the pedal; as we face a possible fourth year of drought, every drop of water becomes more precious every day."

With California undergoing a climate transformation bringing hotter and drier conditions and more extreme weather, Bay Area water agencies along with state and local leaders are encouraging customers to make permanent water wise changes to their landscaping this fall.

"EBMUD customers are phenomenal at conserving water. Our customers have conserved 46 million gallons every day compared to historic use, and by 2050 we want to increase that to 70 million gallons saved daily," said EBMUD General Manager Clifford Chan. "With climate change

resulting in more frequent and severe droughts, we all need to conserve to ensure our water future is reliable. Our goal may seem like a lot, but if everyone makes wise water-use decisions – whether it's fixing a leak, or cutting back on outdoor irrigation, or using new irrigation technology – we will meet that goal. Making conservation a way of life will benefit all our communities."

"We thank our customers who continue to be water wise, and we encourage those with room to save more to reach out to us for help," said SFPUC General Manager Dennis Herrera. "Just as our customers are doing their part, we are doing ours to make the most of our water supplies. In San Francisco we are building a new recycled water treatment plant, initiating innovative partnerships and exploring pilot programs. As the warm months continue, now is the time for everyone to do what they can to reduce outdoor water use in particular."

Actions highlighted during today's press conference are a direct response to Governor Newsom's statewide call to action for residents to reduce their water use by 15 percent in response to the extreme drought throughout California.

For more information on how Californians can take immediate action to save water, visit SaveOurWater.com. To learn more about available rebates, free water saving devices and programs provided by Bay Area water agencies, visit SFPUC.org/BayAreaAgencies.

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- Alameda County Water District provides drinking water to 345,000 people in Fremont, Newark and Union City @AlamedaCountyWD
- California Water Service Company provides drinking water to 389,000 people in the Bay Area through its Bayshore, Bear Gulch, Livermore, and Los Altos Districts @Calwater
- Contra Costa Water District provides drinking water to 500,000 people in central and eastern Contra Costa County @ContraCostaWaterDistrict
- Dublin San Ramon Services District provides drinking water, wastewater and recycled water services to 187,500 people in Dublin and San Ramon @DublinSanRamonServicesDistrict
- East Bay Municipal Utility District provides drinking water and wastewater services to 1.4 million people in portions of Alameda and Contra Costa Counties @EBMUD
- San Francisco Public Utilities Commission provides drinking water to 2.7 million people in four Bay Area Counties. @MySFPUC
- Zone 7 Water Agency is a wholesale water agency, supplying water to all eastern Alameda County, a population of over a quarter million residents. @Zone7Water
- Save Our Water is California's statewide water conservation program that reaches millions of Californians each year through partnerships with local water agencies and other community-based organizations, social marketing efforts, paid and earned media and event sponsorships @SaveOurWaterCA

Contact EBMUD Public Affairs 510-287-0138





News Release Details

Cal Water Applauds Passage of Important Water Conservation Bill SB 1469 (Bradford/Becker)

August 30, 2022

Broad coalition of labor, environmental, business, consumer, and water groups urge Governor Newsom to sign the bill.

SAN JOSE, Calif., Aug. 30, 2022 (GLOBE NEWSWIRE) -- California Water Service (Cal Water) today applauded passage of SB 1469 (Sens. Bradford, Becker), which would make permanent a proven program that has encouraged California water customers to reduce their water use and helped keep water bills low for all customers, particularly low-income customers. The bill now goes to Governor Newsom's desk.

The bill has broad support among labor, business, consumer and environmental groups, lowincome advocates, local governments, and many others who encourage the Governor to sign the bill.

The statement below can be attributed to Martin Kropelnicki, Cal Water's President and CEO.

"SB 1469 is a major game changer that will increase water conservation efforts among water providers and customers alike. With more boom-and-bust water years, California should be doing everything possible to enact policies to help customers conserve. SB 1469 is smart policy that will improve conservation and increase California water supplies."

"We especially want to thank Senators Bradford and Becker, whose hard work was critical to getting the bill to the Governor's desk."

"We urge Governor Newsom to sign SB 1469, as it fits squarely into his recently-released plan urging water regulators to focus not only on conservation, but on increasing water supply."

Background:

Passage of SB 1469 gives water providers regulated by the California Public Utilities Commission (CPUC) a powerful tool that will allow them to focus more on conservation without the risk of not having the resources needed to safely operate their water systems.

SB 1469 allows these water suppliers to take advantage of a regulatory tool known as decoupling. Recognized as a regulatory best practice across the country, decoupling removes the linkage between water providers' financial performance and the amount of water they sell. Instead of focusing on selling more water, utilities are able to turn their attention to expanding water conservation efforts and improving the safety and reliability of their water systems.

California Water Service serves approximately 2 million people through 494,500 customer connections in California. The utility has provided water service in the state since 1926. For more information, visit www.calwater.com.

Contact: Yvonne Kingman, 310-257-1434



NEWS RELEASES August 24, 2022

GOVERNOR URGED TO SIGN BILL TO REINSTATE TAX EXEMPTION FOR TURF REPLACEMENT REBATES

SACRAMENTO — The Association of California Water Agencies (ACWA), California Water Efficiency Partnership (CalWEP), WaterNow Alliance and a large coalition of other associations and local water agencies are urging Gov. Gavin Newsom to sign AB 2142 (Gabriel), which would reinstate the California personal tax exemption for turf replacement rebates and help incentivize participation in these important, water saving programs. The bill passed the Senate yesterday and is awaiting the governor's signature.

"Many water suppliers offer customer rebate programs as a proven, cost-effective tool for reducing water use and promoting water conservation as a California way of life. However, taxing water efficient rebates is a disincentive for Californians to participate in these programs," said CalWEP Co-Executive Director Tia Fleming.

California law already permanently exempts rebates for water efficient toilets and clothes washers, as well as certain plumbing for recycled water and energy conservation, from both personal and corporate taxes. AB 2142 would reinstate the exemption for turf rebates, which expired in 2019.

"These cost-effective incentives will inspire much-needed participation throughout the current drought and are especially important for lower-income households who cannot afford to face additional tax liability," said WaterNow Alliance Executive Director Cynthia Koehler.

ACWA Executive Director Dave Eggerton agreed, stating, "ACWA and the coalition members believe this bill is a no-brainer in making turf rebate programs more appealing to Californians who are looking for ways to reduce water use now and in the future."

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ACWA is a statewide association of public agencies whose more than 460 members are responsible for about 90% of the water delivered in California. For more information, visit www.acwa.com.

CalWEP's mission is to maximize urban water efficiency and conservation throughout California by supporting and integrating innovative technologies and practices; encouraging effective public policies; advancing research, training, and public education; and building collaborative approaches and partnerships. For more information, visit www.calwep.org.

WaterNow Alliance is a network of local water leaders advancing sustainable, affordable, equitable, and climate resilient water strategies in their communities. For more information, visit www.waternow.org.

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For Immediate Release: 8/23/22

CA Tribes and Delta Environmental Justice groups ask State Water Board to Reconsider Delta Plan

Sacramento, CA – Represented by the Environmental Law Clinic at Stanford, California Tribes and environmental justice organizations have sent a formal Request for Reconsideration of the State Water Resources Control Board decision in June of this year denying their Petition to review and update water quality standards for the Bay-Delta.

The Request points out the serious deficiencies in the Board's decision, including its failure to address the Board's decades-long neglect of its duty to update water quality standards and its failure to set forth a pathway to remedy the discriminatory effects of that inaction on Indigenous Peoples and disadvantaged communities in the Delta.

"The State Water Board has made a public commitment to addressing the State sponsored racial inequity baked into the water rights system. It now needs to act in alignment with that commitment by addressing the issues raised in the Petition," said Rica Garcia, an attorney with the Environmental Law Clinic at Stanford Law School.

Stanford Environmental Law Clinic submitted the Request for Reconsideration on behalf of Petitioners Little Manila Rising, Restore the Delta, Save California Salmon, Shingle Springs Band of Miwok Indians, and Winnemem Wintu Tribe.

In addition, a Letter of Support for Petitioners' Request for Reconsideration was signed by Councilwoman Kimberly Warmsley of the City of Stockton, the NAACP Stockton Chapter, Nopal: Community Cultura Activism Educación, Catholic Charities Diocese of Stockton, Reinvent Stockton Foundation, Third City Coalition, P.U.E.N.T.E.S, Edge Collaborative, Reinvent South Stockton Coalition, and Public Health Advocates.

Under state law, the State Water Resources Control Board has 30 days to respond to the reconsideration request.

Background

On May 24, 2022, the Petitioners listed above filed a Petition for Rulemaking with the California State Water Resources Control Board.

The May 24 Petition included an extensive description of California's racist history that formally granted water rights only to white men. Indigenous Peoples and communities of color in the Delta were not given the opportunity to acquire water rights under state law. And the water rights system continues to fail to recognize that Indigenous communities, who used and stewarded the waterways since time immemorial, have prior rights to the water. Today, so-called "senior" water rights holders, who acceded to the colonialists' water rights claims, still have a tight grip on river flows, even during an unprecedented drought. The Sacramento-San Joaquin Bay-Delta, the largest estuary on the West Coast of the Americas, is dying as a consequence.

The Petition was recognized as presenting a critical and sorely overlooked lens into California's ongoing water battles. Delta water crisis linked to California's racist past, tribes and activists say, Los Angeles Times, 5/26/22

The State Response Found Lacking

On June 24, the State Water Board, responded by denying the petition.

Among other errors pointed to in the Reconsideration Request, the Board failed to acknowledge that it is decades behind schedule in reviewing outdated water quality standards for the majority of the watershed, or set forth meaningful commitments to completing its review. It was also silent on the documented harms that Indigenous Peoples and disadvantaged communities in the Delta continue to experience as a result of low flows and poor water quality resulting from the Board's inaction. And it was silent on what actions it would take, as the law requires, to correct this discrimination and to consult with tribes and environmental justice communities in doing so.

"The State Water Resources Control Board's dereliction of duty continues. The Board's response did not actually address the issues central to our Petition for Rulemaking. So we are now considering all of our options," said Gary Mulcahy, Government Liaison for the Winnemem Wintu Tribe.

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Restore the Delta presents "Where the Future Flows: Next Generation Visioning for the Delta," a virtual symposium on October 13th and 14th.



August 11, 2022

EBMUD joins State effort to enhance Bay-Delta ecosystem

OAKLAND – The East Bay Municipal Utility District (EBMUD) today signed a Memorandum of Understanding with the State of California to develop an agreement to improve water flows and habitat in the Sacramento-San Joaquin Delta.

EBMUD has been negotiating with the state on an approach to provide additional flows from the Mokelumne River to support the endangered Delta ecosystem while also ensuring reliable, highquality water supplies to the East Bay community.

"With decades of successful collaboration on the Mokelumne River, EBMUD looks forward to working with the state and other parties on an effective collaborative effort to help achieve the state's goals for the Bay-Delta," said EBMUD General Manager Clifford Chan. "This not only supports the Bay-Delta Plan, but also protects the communities and economy of the East Bay."

The Mokelumne River provides drinking water to 1.4 million residents in the growing and vibrant communities and economy of the East Bay. The river is a small part of the Bay-Delta system, contributing 2.5 percent of the total inflow, but is home to the vital Mokelumne River salmon fishery, which is commercially and recreationally important to the state and contributes as much as 40 percent of the statewide salmon catch each year. The Mokelumne River is the only California river meeting the state's salmon doubling goal, one of the core objectives of the state's current Bay-Delta Plan.

Collaboration has been an important part of this success. In 1998, EBMUD and state and federal resource agencies established a partnership agreement under which EBMUD releases increased flows to the Mokelumne River to benefit fisheries and implemented habitat measures to enhance the fishery ecosystem. EBMUD has led a formal science-based effort with state and federal agencies, environmental organizations, and river stakeholders to successfully use flow and non-flow measures to benefit the fishery. EBMUD's deep commitment to the Mokelumne River is demonstrated by the successful collaboration to add the Mokelumne River to the state's Wild & Scenic Rivers system.

Some of the key aspects of the newly signed MOU for the Mokelumne River are:

1. Good for Fish – This MOU enhances the already successful EBMUD Mokelumne salmon program by providing additional flows on top of what EBMUD already releases for fish, timed around the salmon life cycle, and will also contribute to improved conditions for Delta fish.

2. Protects the East Bay – This MOU helps resolve a regulatory process that had the potential for significant water supply impacts for the people, communities, and economy of the

East Bay. The additional Mokelumne River flows in the MOU will help the Bay-Delta while enabling EBMUD to achieve its water supply reliability goals for the East Bay.

3. Fair – This MOU clearly defines EBMUD's contribution of water and funding that is fair and equitable for the size of the river. The contributions will support the Bay-Delta, which is critical to the entire state.

4. Significant first step in a long-term process – Though there is more work to be done, this MOU defines appropriate contributions to the environment and provides an equitable basis from which to craft a final approach.

Looking forward, EBMUD and the State agencies (California Environmental Protection Agency, California Natural Resources Agency, Department of Water Resources and Department of Fish and Wildlife) will use the broadly defined areas of agreement to develop detailed implementation agreements that describe how contributions from the Mokelumne River and other rivers will support the water quality objectives for the Bay-Delta.

"We are pleased that we have reached a consensus that enables EBMUD to continue working with the state towards a long-term approach while empowering EBMUD and its partners to build on our past environmental successes to improve the health of the Bay-Delta," said Director of Water and Natural Resources Michael Tognolini.

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The East Bay Municipal Utility District has a proud history of providing high-quality drinking water for 1.4 million customers in Alameda and Contra Costa counties. EBMUD's wastewater system serves 740,000 customers and helps protect the ecosystem of San Francisco Bay. EBMUD is a not-for-profit public agency established in 1923.

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Contact EBMUD Public Affairs 510-287-0138

Diverters of Tuolumne River water suddenly see hope for state agreement on fish flows Modesto Bee | September 7, 2022 | John Holland

The main diverters of Tuolumne River water could be closing in, finally, on an agreement with the state on fish protections.

The boards of the Modesto and Turlock irrigation districts voted separately Tuesday to direct their staffs to finalize the deal.

Details have not yet been disclosed on how much more water would be released from Don Pedro Reservoir to support salmon and other fish in the lower river.

Only about 20% of natural flows are left in an average year after MID, TID and San Francisco take their shares. The volume would roughly double under a plan approved in 2018 by the State Water Resources Control Board but not yet carried out. That idea has support from environmental and fishing groups but raised a furor from local agencies.

The districts and San Francisco have offered to boost reservoir releases somewhat while also enhancing fish habitat with non-flow measures such as restoring spawning gravel.

The state board has reached these "voluntary agreements" with some of the other users of Central Valley rivers. Exactly what led to the recent progress on a Tuolumne pact is not public, but the state is expected to release the details at some point.

The Tuolumne River Trust has opposed the diverters' proposal in the past and remains skeptical, Policy Director Peter Drekmeier said in an email Tuesday.

"Of course, we don't have any details about a new (agreement), but we assume it will be more of the same and will again delay implementation of the desperately needed Bay Delta Plan," he said.

That larger plan involves numerous rivers that run in the Sacramento-San Joaquin Delta and San Francisco Bay.

DISTRICTS GET HALF THE WATER

MID and TID have rights to about half of the Tuolumne. San Francisco sends an eighth to the Bay Area and has signed on to the pending agreement. The rest of the water is taken by riverside rights holders or makes it to the Delta and Bay.

Tuesday's votes were unanimous in boardrooms about 14 miles apart.

"To me, today is a huge win for our community," TID Chairman Michael Frantz said. "It's a win for the Tuolumne River."

State Assemblyman Adam Gray, D-Merced, attended the TID meeting and praised the vote in an interview afterward.

"Credit to the board here in Turlock for pushing back on the state and making sure to get an agreement in place that benefits both our local communities with respect to drinking water as well as our agricultural economy," he said.

The final agreement will need votes from the five-member state board and the governing bodies for the diverters. TID General Manager Michelle Reimers said she hopes it will take effect by 2024.

The 2018 state board decision also involved the Stanislaus and Merced rivers.

The largest voluntary agreement by far was announced in March by Gov. Gavin Newsom. It includes the districts supplying the Sacramento Valley's rice belt, the city of Sacramento and its suburbs, most of urban Southern California and the Westlands Water District, the largest farmwater agency in the San Joaquin Valley.

These diverters agreed to leave more water for fish while investing in habitat projects. The Tuolumne plan would be merged into it.

"We don't have to choose between healthy ecosystems or a healthy economy," Newsom said in March. "We can choose a path that provides for both. This is a meaningful, hard-earned step in the right direction."

RIVER ARISES IN YOSEMITE

The Tuolumne winds for 149 miles from its headwaters in and near Yosemite National Park. The state board action involved only the 52 miles from La Grange to the confluence with the San Joaquin River.

MID and TID secured rights to the Tuolumne soon after both were founded in 1887. The Modesto district started treating water for city residents in the mid-1990s. A plant now under construction will treat TID water for residents of Turlock and Ceres.

San Francisco got rights in 1913 to build its Hetch Hetchy Water and Power System. It provides part of the water supply in four Bay Area counties.

SFPUC General Manager Dennis Herrera noted in an emailed statement that the agreement would invest \$64 million for fish over eight years.

"We've always been willing to do our part to further protect natural habitats, including in times of drought," he said. "Now we have a framework agreement that strikes the right balance. It safeguards the water supply for 2.7 million Bay Area residents and businesses while continuing the SFPUC's track record of strong environmental stewardship."

The Tuolumne River Trust has advocated for four decades for increased fish flows, watershed health and conservation by water users. It questions the idea that salmon would benefit from non-flow habitat measures, including floodplain restoration and control of nonnative bass that prey on the natives.

"Flows need to be sufficient to keep the river from getting too warm, activate floodplains ... and flush (fish) into the Bay-Delta," Drekmeier said.

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TID moves closer to voluntary agreement with state water board

Turlock Journal | September 6, 2022 | Joe Cortez



TID moved one step closer to a Voluntary Agreement regarding the Bay-Delta Plan regarding water flows on the Tuolumne River (Photo contributed). - photo by Photo Contributed

Turlock Irrigation District's board of directors voted unanimously Tuesday to move toward a voluntary agreement that would supersede flow requirements within the Bay-Delta Water Quality Control Plan.

That plan was first adopted in 2018, but the flow requirements never have been implemented. But since then, the plan has been the flashpoint for a debate — in simplest terms, think of it as fish vs. farms — that pits the environmental groups, such as the Tuolumne River Trust, against public utilities, such as the Turlock Irrigation District, Modesto Irrigation District and the San Francisco Public Utilities Commission. Those three agencies share the Tuolumne River's water rights.

The 5-0 vote gives TID general manager Michelle Reimers and staff the green light to sign a memorandum of understanding, which very likely will lead to the voluntary agreement with the state's Water Resources Control Board.

"The goal of negotiating a successful VA is to avoid the implementation of the Bay-Delta Water Quality Control Plan Phase I, which, you know, is absolutely devastating to our region," Reimers said during Tuesday's special meeting at TID headquarters. "Last week, we came to a consensus on the major issues that we've been facing with the state."

Details of the accord will not become public until a final agreement is reached, but the decision not only had the full endorsement of Reimers and the board — as well as Modesto's board later in the day — but of Assemblyman Adam Gray, D-Merced.

"I've been a supporter of the Voluntary Agreements for the entire 10 years I've been in the state legislature," said Gray, who is running for the 13th District's congressional seat this fall against Hughson businessman John Duarte. "I've worked closely with TID, MID, and Merced Irrigation District, to try to bring this to fruition. I'm extraordinarily pleased that they've taken a step forward."

Peter Drekmeier, policy director for the Tuolumne River Trust, was not surprised by Tuesday's outcome, and does not support it.

"We do not support the Voluntary Agreements as they've been configured," said Drekmeier. "The last iteration of VA negotiations lasted four years and the Bay-Delta plan stalled. Now, the process is starting over. Meanwhile, the fish desperately need more water and we see this as another delay tactic."

TID board president Michael Frantz stressed that the finish line remains uncrossed.

"Lots of opportunities for things to go wrong," cautioned Frantz. "We're dealing with a very complex issue, lots of agencies and lots of interested parties, and a lot of people who are very passionate about this issue... I feel like we're at a better place than we have been ever, so I'm optimistic."

On average, about 20 percent of the Tuolumne's water flows remain each year after Turlock, Modesto and San Francisco take their share.

Under the current Bay-Delta Water Quality Control Plan, that number would double — pleasing to environmentalists, but not to farmers, who say that would leave them with too little water come irrigation season.

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15-day watering ban begins for parts of L.A. County

LA Times | September 6, 2022 | Summer Linstaff



A sprinkler waters a lawn in Los Angeles in May. A 15-day outdoor watering ban is now in effect for 4 million Los Angeles County residents as crews make emergency repairs to a pipeline.(Mel Melcon / Los Angeles Times)

A 15-day outdoor watering ban took effect for 4 million Los Angeles County residents on Tuesday as crews make emergency repairs to a pipeline that delivers water to Southern Californians, according to the Metropolitan Water District of Southern California.

The 36-mile Upper Feeder pipeline, which carries water from the Colorado River to Southern California, began leaking earlier this year, officials said. The agency made temporary repairs and continued using the pipeline at a reduced capacity but scheduled permanent repairs to be made from Tuesday to Sept. 20, during which the pipeline will be offline.

"We need to make this urgent repair to ensure this infrastructure can continue serving Southern California in the immediate term and for years to come," Brent Yamasaki, MWD operations manager, said in a statement. "While we do this work, we need people who normally get water from this pipeline to eliminate their outdoor water use to stretch the limited available water supplies. We don't take this call lightly, but it is what is needed at this time."

The ban affects people in Beverly Hills, Glendale, Burbank, Malibu, Long Beach, Pasadena, San Fernando and Torrance, in addition to residents in the Central Basin Municipal Water District, Three Valleys Municipal Water District, Foothill Municipal Water District and West Basin Municipal Water District. Residents can view the shutdown map on the Metropolitan Water District website to learn more. Residents of the city of Los Angeles and others served by the L.A. Department of Water and Power are not affected, though they are subject to other restrictions.

About 6 million residents of Los Angeles, Ventura and San Bernardino counties have been limited to outdoor watering one day a week since June 1. Consumers under emergency conservation will have to continue adhering to the water rules.

The leak was discovered in April and the pipeline has been operating at a reduced capacity ever since, according to Adel Hagekhalil, MWD general manager. Staff built a 108-inch pipeline connection that is needed to permanently repair the pipeline.

"The temporary fix we have in place has allowed us to operate the pipeline at a reduced capacity over the summer, but it is not intended to last long term," Hagekhalil said. "We cannot delay this repair any further — doing so risks a failure and the potential for an unplanned, emergency situation."

Burbank will be offering free recycled water during the shutdown at George Izay Park as part of the city's "H20 to Go" program. The recycled water is not safe for drinking and is intended to be used to irrigate trees, plants and gardens.

During the shutdown, officials recommend residents eliminate all outdoor irrigation, stop mowing their lawns and minimize the use of their lawns for parking vehicles and recreation. People are encouraged to put a bucket in their showers to collect water as it warms, then use that water for plants and hot spots on their lawns that are under excessive stress.

The agency also urged people not to leave the water running while washing dishes, and instead fill the sink or a bucket with water to wash their dishes. The used water can then be used to irrigate trees and grass.

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Summer Lin is a reporter on the Fast Break Desk, the Los Angeles Times' breaking news team. Before coming to The Times, she covered breaking news for the Mercury News and national politics and California courts for McClatchy's publications, including the Sacramento Bee. An East Coast native, Lin moved to California after graduating from Boston College and Columbia University's Graduate School of Journalism. In her free time, she enjoys hikes, skiing and a good Brooklyn bagel. California's water year is nearly over. Here's where our reservoirs stand amid drought Sacramento Bee | September 1, 2022 | Michael McGough

With California about to experience perhaps the hottest and driest start to September in its modern history, 16 of the state's 17 major reservoirs entered the month below their historic average levels — several of them well below average, in another daunting reminder of California's extraordinary ongoing drought and water concerns.

The state's two largest reservoirs, Shasta Lake and Lake Oroville, were measured at a respective 58% and 64% of their averages for the end of August, according to data from the California Department of Water Resources.

Folsom Lake, which had been above its average as recently as July 14, finished August at 82%. The U.S. Bureau of Reclamation earlier this summer had to accelerate releases at the lake — a key export source of water for Southern California — to make up for dwindling levels at Shasta Lake.

Only New Bullards Bar, a reservoir in Yuba County within Tahoe National Forest, came in above average through the end of August. The reservoir was 70% of its total capacity, which is 104% of normal for this time of year, according to state water data.

Six smaller reservoirs — Casitas, Castaic, Pine Flat, New Melones, McClure and Trinity — are below half of average. Trinity Lake was at just 25% of its total capacity, which is 38% of its Sept. 1 average.

EXTREME DROUGHT OR WORSE ACROSS VALLEY

The U.S. Drought Monitor in a weekly update Thursday recorded 98% of California in at least "severe" drought status, 40% of the state in "extreme" drought and 17% in "exceptional" drought, which is the scale's highest classification.

Extreme drought conditions blanket the entire Central Valley; within it, the San Joaquin Valley comprises essentially the entire pocket of exceptional drought.

The latest drought numbers actually mark an improvement from the beginning of September 2021, when 47% of the state was considered to be in exceptional drought, but remain a letdown after deluges last October and December.

California's water year runs from October to September. After a flourishing start that included an October "bomb cyclone" storm in Northern California and the Bay Area that brought Sacramento a single-day rain record, as well as powerful storms in the Sierra Nevada mountains that also broke records last December, the entire state is poised to finish the year with precipitation totals significantly below average.

Much of California, including Sacramento and the central Sierra Nevada mountains, took in record-low precipitation this January through March before recovering some in April.

Most of the Sacramento region ranged between about 80% to 90% of average rainfall from Oct. 1 to Sept. 1 according to data from the National Oceanic and Atmospheric Administration.

The numbers have been more dire elsewhere in the Central Valley. The greater Redding area received about 60% of its historic average for precipitation over the past 11 months, and the Fresno area came closer to 50%.

And because the state's biggest storms came so early in the water year, the year-to-date numbers remain front-loaded. Snowpack melted to zero in the southern Sierra mountains by early May and in the central Sierra by early June, thanks in part to heat waves during spring.

That means soils and vegetation had plenty of time to dry out, becoming susceptible as wildfire fuel.

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Water agency experts predict a fourth year of drought, urge Bay Area residents to conserve more

CBS Bay Area | August 30, 2022 | Max Darrow

FREMONT (KPIX) -- California water conservation experts sounded an alarm on Tuesday. They warned Bay Area residents to brace for a fourth dry year in a row, as the drought persists.

"We are making investments across the state and in the Bay Area to help build our resilience to drought and to climate change," said Wade Crowfoot, the California National Resources Agency Secretary. "The conservation actions we take now will pay off in water reliability later in the future."

People in the Bay Area have stepped up conservation efforts over the last several years.

The 1.4 million customers who get their water from the East Bay Municipal Utility District (EBMUD) reduced consumption by 16% in July when compared to 2020, and by 15% in August, according to General Manager Clifford Chan.

The 345,000 customers who get their water from the Alameda County Water District (ACWD) saved about 20% in July of this year when compared to 2020, according to General Manager Ed Stevenson.

However, with the drought persisting, Stevenson, Chan, Crowfoot, and several other leaders from Bay Area water agencies, say it's crucial for people to keep up with and improve conservation efforts.

"They've really done a great job, but we do need to do more. We need to keep our foot on the pedal," Stevenson said.

"Californians have stepped up before and we're asking them to step up again. But, we're pairing this conservation with generational investments in water recycling, desalination, and water storage, to ensure that moving forward – we're going to continue to experience these conditions – but we're going to be more well-equipped through investments we're making now," Crowfoot said. "We need everyone's help to stretch water supplies now."

Numerous Bay Area water companies offer rebates and free services to help people conserve.

"We freely provide a water conservation technician who will come out and evaluate the water needs of your home. They'll bring water saving devices like aerators and shower heads, evaluate your water use, and provide personalized recommendations on how to cut your water waste," said Dennis Herrera, the General Manager of the San Francisco Public Utilities Commission. "We offer rebates on efficient washing machines, rain barrels, and other water-using infrastructure."

As the Bay Area is set to experience a hot weekend, Crowfoot says it's a good time to fine-tune systems to ensure they aren't wasting water.

"This weekend is a great time to get out there, repair that leak in the yard, install drip irrigation, consider changing out lawns and taking advantage of incentives from our regional agencies," he said.

To learn more about rebates and water conservation resources, visit sfpuc.org.

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The fight against drought in California has a new tool: The restrictor

CNN | August 28, 2022 | Stephanie Elam

Calabasas, CA (CNN) - The pretty, cloudless blue skies over perfectly manicured lawns represent an ugly reality for California's Las Virgenes Municipal Water District as it grapples with the historic megadrought ravaging the American West.

Despite a lack of any measurable rain in months, the carpet of lush, green grass likely means homeowners are either not getting the message about the dire need for water conservation, or they are ignoring the warnings.

But now, the water district has found a way to get customers' attention. When customer service representatives are working in the different neighborhoods, they keep an eye out for any water restriction violations. And for repeat offenders, officials are trying something new: adding water restrictors to the pipes, which sharply reduce the home's water supply.

Lawns of the rich and famous

The District covers some of the most sought-after real estate in Southern California, northwest of Hollywood and Beverly Hills, including areas along the Ventura Freeway.

Las Virgenes imports all of its water from the State Water Project, which pipes runoff from the northern Sierra Nevada mountains to Southern California. However, at the end of winter, the snowpack was just 4% of normal, forcing unprecedented restrictions. Las Virgenes is only getting 5% of its requested water supplies this year.

"We're having to supplement the water that we have been getting from the State Water Project," said Mike McNutt, public affairs and communications manager for Las Virgenes, who added the district is pulling water from its Las Virgenes Reservoir, its stash for emergency needs, just south of Thousand Oaks.

Right now, McNutt confirmed it is 72% full; at full capacity, it is a six-month supply. "We've had to take significant measures to curb water usage in order for us to ensure that there's long-term water reliability meaning moving into the fall and winter," McNutt noted.

Nearly all of California is in severe or worse drought (the highest three designations), per the latest US Drought monitor. Several severely deficient years of rain and snow have punctuated a 20-year long megadrought scientists say is being fueled by warmer and drier conditions brought on by climate change.

When the grass being greener isn't a good thing

In light of the shortage and the prolonged drought, Las Virgenes has mandated residents cut their outdoor watering by half as required by the unprecedented order from its distributor, the Metropolitan Water District of Southern California.

Outdoor watering makes up 70% of most customer's water usage, the water district says, so cutting down on irrigation can have a huge impact on conservation.

"They are only allowed to water one day a week outside, Tuesdays and Thursdays, depending on whether your address ends with an odd number or even number," McNutt explained. On top of that, each set of sprinklers can only be on for eight minutes. "It helps maybe keep some of the grass alive if people want to still continue to have lawns, but they are brown."

CNN rode along with Las Virgenes senior field customer service representative Cason Gilmer as he looked for wasted water. When he and his team drive around the coverage area, they keep an eye out for water where it shouldn't be -- on sidewalks and running down streets into gutters -- or outdoor irrigation on when it should be off.

"When it's in our face and the sprinklers are going off at noon on Wednesday, it's an easy target for us," Gilmer, who noted most customers seem to be doing their part now. "This street in particular was very, very green two months ago."

Along the ride, the number of homes with vibrant green grass were outnumbered by brown lawns. Some lawns have been replaced with turf and others have been painted green.

Neighbors can rat on each other, celebrities included

If anyone from the water district spots water waste, they can leave a door tag to let the homeowner know they are not in compliance and what they need to do. They also send mailers. The water district also fines abusers, resulting in charges which can reach thousands of dollars depending on the size of the infraction.

But the affluent haven of Calabasas, inside the water district's territory, is home to many Alisters with deep pockets. Some of those household names -- celebrities, musicians and athletes -- have used far more water than they should have, according to recent data.

People like Kevin Hart, Dwyane Wade, and according to the Los Angeles Times, Kourtney Kardashian, as well as sister Kim.

None replied to CNN's request for comment. However, in a statement to the Times, Wade and his wife, actress Gabrielle Union, said they have "taken drastic steps to reduce water usage in accordance with the new city guidelines and have since we moved into our home."

Las Virgenes said all of those celebrities are in good standing now.

"Those specific celebrities have been working very closely with the district. They do want to do the right thing ... in order to achieve a much more efficient water usage tier," McNutt said.

And when fines are not enough, it's time to bring in the restrictor

With so many wealthy residents, Las Virgenes has learned some customers respond more to losing water than they do losing money.

"We try to get public education and notification and stuff about drought out there, but a lot of people throw the mailers away. They ignore it," said Gilmer, who created a simple, yet effective way to get users' attention one gallon at a time. "I call it a bit of a last resort."



The restrictors have a small hole in the middle, which sharply reduces water flow to the home.

The water restrictor is a slim circle of food grade stainless steel with a small hole in the middle, which fits right into the offending customer's water meter, which technicians can usually access right on the street since the meters are district property.

"This particular restrictor will give you around one gallon a minute. Normally, a three-quarterinch meter is 25 to 30 gallons a minute. So at 25 to 30 gallons a minute, you can run your dishwasher and run your sink and have somebody in the shower and maybe even have your irrigation on and nobody knows the difference," Gilmer explained. "With the restrictor in ... your sink works fine. Your shower works OK. Your irrigation will not work. It just won't supply the amount of water that's demanded."

Gilmer even tried it at his own house to see what it was like having his water restricted.

"The big part was that you can't do two things at once. So if I was in the shower and my wife tried to do dishes, my shower was done. I just got out," Gilmer said with a slight smile. "My wife demanded I take it off after a day and a half."

After a customer uses more than 150% of their water allocation four times, they will be in line to get the flow restrictor installed. Las Virgenes says about 1,600 connections, or just more than 7% of its customer base falls into this category.

"It's not meant to be punitive," McNutt said. "It's meant to tell people ... this drought is incredibly serious and what we need you to do is do your part."

McNutt added Las Virgenes is leading by example in California as it is "using these flow restriction devices for conservation purposes."

"We're kind of leading this charge moving forward of how do we get people to stop using so much water with the advancement of climate change."

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7 states and federal government lack direction on cutbacks from the Colorado River KQED | August 27, 2022 | Luke Runyon



The Colorado River flows over mud flats upstream of Lake Powell near Hite, Utah. Luke Runyon/KUNC

GRAND JUNCTION, Colo. — As the Colorado River shrinks, the seven states in the western United States that rely on it for water and power need to cut their use dramatically to keep the biggest reservoirs from getting critically low, according to federal analysts.

But a recent deadline for a plan to conserve an unprecedented amount of water came and went without many specifics from either the states or the federal government on how to achieve the cutbacks.

In June, federal officials gave leaders in the states the draw from the river — Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming — a mid-August deadline to come up with a plan to conserve 2 to 4 million acre-feet of water across the Southwestern watershed. One acre-foot is more than 325,000 gallons. Federal officials said they wanted to see cuts from all seven states, from every sector.

With the deadline now passed, and lingering uncertainty about where those cutbacks will come, some of the region's leaders are calling for the federal government to take charge.

Water stored in the Colorado River's biggest reservoirs has declined during the past two decades due to climate change and overuse. The river and its tributaries provide drinking water to 40 million people, and irrigate millions of acres of cropland. In addition to the seven U.S. states, the river also crosses into Mexico and provides water supplies to cities and farmers in two Mexican states as well.

At Lake Powell, the nation's second-largest reservoir on the river, water levels are threatening to dip low enough that its dam would lose the ability to produce hydropower. That could come as early as November 2023. All but two boat ramps at the recreation hotspot are now closed due to its low level.

"We want to encourage [the states] to be doing as much as possible," said Tanya Trujillo, the Interior Department's assistant secretary for water and science. "There is an urgent requirement to be doing that. We're trying to explain the modeling information that we have paints a very, very urgent situation. We feel the urgency. They should feel the urgency."

Trujillo and other federal water managers said that if the states couldn't come up with a plan for those cuts by the August deadline, the federal government would take action to protect the river system. The possible actions the federal government has laid out start administrative processes to study how the river's large dams might be re-engineered or operated. They also plan to incentivize agricultural efficiency by offering additional funding.

The federal government also announced incremental increases in existing water cuts for Arizona, Nevada and Mexico, starting in January 2023. Those cuts were already agreed to, and it's still not clear what specific actions federal officials could or will take to prevent the reservoirs from declining to critically low levels.

"Our water users really would like to understand the federal government when they say, 'If you don't take action states, we will,' " said Andy Mueller, general manager of the Colorado River District, a water agency in rural Western Colorado. "Well, what are the actions being proposed?"

Even though the federal government has yet to deliver on its threat to intervene, it could still happen, Mueller said. The call for cuts was clear and came with specifics -2 to 4 million acrefeet in cuts across the watershed. But the threat of what happens if the states can't get there remains unclear.

"If you don't know what that threat is, it's really hard to be motivated to take action," Mueller said.

Aversion to federal intervention runs deep along the Colorado River. Some state leaders say the federal government should simply run the dams, and not wade into policy-making. Others doubt

the forcefulness of federal authorities to mandate cutbacks, most of which are entirely untested. As the river's scarcity crisis has deepened in recent years, others in the basin are beginning to crave federal leadership.

"There was a deadline that came. It passed. Nothing happened," said John Entsminger, general manager of the Southern Nevada Water Authority, which serves the Las Vegas metro area. "I think it would be much more effective if the federal government actually, in writing, articulates a plan."

When it became clear the states were not going to reach an agreement ahead of the deadline, he pleaded with federal officials to take the reins and make hard decisions about where some of the cuts need to come from. This tension between the states and the federal government only works as a motivator when state leaders believe a federal crackdown might really happen, he said.

"The states have never accomplished anything meaningful without a credible federal threat," Entsminger said.

But it is not only the Biden administration applying pressure through the various federal agencies involved in the West's water management. Pressure from the city leaders, farmers and residents in the Southwest is mounting as well.

"I think the general public is aware of the real crisis that's developing in the Colorado River basin in a way they previously haven't," Entsminger said. "There's pressure building from constituencies across the basin to do something."

Members of Congress have begun to take notice as well.

U.S. Rep. Greg Stanton, an Arizona Democrat, called for the river's users to "share the sacrifice to solve this crisis," and called the federal threats to intervene, "hollow."

In Nevada, U.S. Sen. Catherine Cortez-Masto gave federal officials her own deadline, asking to see firm plans on how to spend the \$4 billion set aside in the Inflation Reduction Act to help solve the region's water-scarcity problems.

In response to the complaint that they should be doing more, federal water managers said they are going to continue working with states on a plan for cutbacks. No new deadline has been set.

Kathryn Sorenson, a water policy researcher at Arizona State University, said if the federal government were to take drastic action, it could alienate people in states that rely on the river.

"Certainty is just paramount," Sorenson said. "And the cities, the tribes, those who are depending on this water, they need to know what to expect. And right now, that's completely lacking."

But if the feds don't take action, she said, the risk falls on the reservoirs.

"No one wants to make this call, right? It's not enviable to be in a position of saying who gets water and who doesn't," Sorenson said.

###

Valley Water discusses drought solutions during water summit

Meeting comes as state experiences third consecutive year of severe drought emergency Palo Alto Online | August 27, 2022 | Bay City News Service



People row up and down Lexington Reservoir in Los Gatos on July 7, 2021. Photo by Magali Gauthier.

The Santa Clara Valley Water District hosted a summit Friday morning in Santa Clara, bringing together elected officials and organizations across the Bay Area to discuss solutions to statewide water problems as California experiences its third consecutive year of a severe drought emergency.

Water Summit 2022 focused on both short- and long-term solutions and mitigations to water shortages.

Aaron Baker, the chief operating officer for water utility at Valley Water, said such solutions are needed to help the region through the current drought.

For Valley Water, some of the solutions include conservation programs. The water district offers rebates for scrapping lawns in favor of low water use and environmentally friendly options, and rebates to those irrigating with graywater diverted from laundry use. Landscaping rebates can reach up to \$3,000 for residential sites and \$100,000 for commercial, institutional or industrial sites, depending on the water use savings.

The water district also offers free conservation devices to single-family and multi-family homes and commercial properties.

"We have programs for every home and business in the county," said Kirsten Struve, assistant officer for the water supply division at Valley Water.

The district has seen success with its conservation outreach, citing more than 1 million square feet of lawn that has been converted to more environmentally and drought friendly landscaping and that the organization now has 22 conservation programs operating.

As the summit turned to more long-term solutions, Chris Hakes, the deputy operating officer for dam safety and capital delivery for Valley Water, discussed the Anderson Dam Seismic Retrofit Project.

Anderson Reservoir, the largest groundwater recharge reservoir for Valley Water, is undergoing a dam tunnel project as part of a federally mandated project to make the dam up to current safety standards. The project is expected to be completed in 2024.

Following the tunnel, the project will continue into future phases that include reconstructing the embankment and replacing the spillway, keeping the downstream Morgan Hill area safe. The project is expected to be completed by 2031 or 2032.

Ryan McCarter, the Pacheco project manager for Valley Water, also outlined another reservoir project that the organization believes could help with water storage to mitigate the shortages of a drought.

McCarter said that the Pacheco Reservoir, located in southeast Santa Clara County, is going to be expanded and allow the county to double its capacity for storage. The project will move a new dam upstream and utilize an existing pipeline to bring water into the region.

While the project has already received more than \$500 million from the state, Valley Water is continuing to look for grants and partnerships to fund the expansion of the Pacheco reservoir.



The Pacheco Reservoir Expansion Project is a collaboration between Valley Water, the San Benito County Water District, and the Pacheco Pass Water District. The project will boost Pacheco Reservoir's operational capacity from 5,500 acre-feet to up to 140,000 acre-feet. Courtesy Valley Water via Bay City News.

The project will allow the reservoir to hold enough water for 1.4 million people for one year, while also improve downstream habitats for 10 miles.

Struve outlined the organization's other major focus for long-term water solutions: purification.

The process involves purifying the water typically disposed into the Bay to be reused. Valley Water is looking into expanding purification plants, with the goal of using recycled water to cover 10 percent of water use in future years.

The project would involve a 20-mile pipeline connecting wastewater treatment plants with further purification centers and recharge systems.

Another challenge facing purification? Public perception. Valley Water asked attendees to voice their support for the project to others to try to change the perception of recycled water as dirty, given the intense purification system and modern technology involved.

Other speakers at the summit also focused on the importance of hiring workers to the water industry with diversity and inclusion in mind, including through a focus on students from historically Black colleges and universities through a partnership with the Silicon Valley Leadership Group.

Valley Water Board of Directors chair pro tem John Varela ended the summit by calling on all to spread the message that social justice, water recycling and water conservation are essential to California making it through droughts.

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Most Californians view state's water shortage as extremely serious, poll finds

LA Times | August 25, 2022 | Ian James



Lake Oroville, the largest reservoir in a state system that provides water to 27 million Californians, is currently at 38% capacity.(Francine Orr / Los Angeles Times)

Most Californians agree the state's drought situation is very serious, but only a minority of voters say they and their families have been significantly affected by the current water shortage, according to a new poll.

The survey of more than 9,000 voters statewide found that 71% said the state's water shortage is "extremely serious," while 23% described it as somewhat serious.

Far fewer of those voters indicated they are directly feeling the effects of the drought, according to the poll by the UC Berkeley Institute of Governmental Studies, which was co-sponsored by the Los Angeles Times. Just 9% said they and their families have been affected "a great deal" by the current water shortage, and 32% said they've been affected somewhat, while 57% said they have been affected "only a little" or not at all.

That's a notable change from 2015, during California's last major drought, when a similar poll found that 58% said they were affected at least somewhat by the water shortage at that time, and that 76% described the shortage as extremely serious.

"What's striking to me is that it's not really directly affecting as many voters as you might think," said Mark DiCamillo, director of the Berkeley IGS poll. During the current drought, he said, the water shortage "really hasn't been as broadly felt by voters, at least not up to this point."

The survey results didn't directly address why that might be. But months before that October 2015 poll, at the height of the 2012-2016 drought, then-Gov. Jerry Brown ordered cities and towns to cut water use by 25% under mandatory statewide restrictions.

Gov. Gavin Newsom has taken a different approach, calling for Californians to voluntarily reduce water use by 15% while giving local water suppliers greater leeway in adopting conservation measures.

In large portions of Los Angeles County, there are mandatory restrictions limiting outdoor watering. Many of the L.A. County voters who participated in the survey said they're not having trouble complying, but a large majority also said they're already doing all they can to conserve.

Asked how easy or difficult it has been to follow water restrictions, 44% of L.A. County respondents said complying has been easy, 13% said it's been difficult, and 43% said they don't know or have no opinion. Renters were more likely to have no opinion. Among homeowners, 55% said complying with water restrictions has been easy. About 1-in-5 homeowners said compliance has been difficult, but only 3% said it has been "very difficult."

The poll found some differences among regions and demographic groups, with older voters, homeowners, Latino voters who primarily speak Spanish, and voters in the Central Valley somewhat more likely than other groups to say they've been affected by the water shortage.

The share of voters who said they have been at least somewhat affected ranged from a low of 27% in Orange County to a high of 52% in the San Joaquin Valley.

Farmers in the San Joaquin Valley are coping with major cuts in water supplies and have been drawing on groundwater while leaving large portions of farmland dry and unplanted. With groundwater levels dropping, hundreds of household wells have dried up in the region over the past year. The state has received reports of 966 dry wells throughout California so far this year, a 72% increase over the same period last year. Many of the wells that have run dry are in farming areas, mostly affecting low-income residents.

Eighteen percent of those who live in the San Joaquin Valley said they have been affected "a great deal" by water shortages, more than any other region of the state.

To the north, in the Sacramento Valley, 42% said they have been affected somewhat or a great deal. That parallels similar percentages in many other parts of the state. In Los Angeles County, 42% said they have been affected, with 9% saying they have been affected a great deal.

Impact of drought

Voters in different parts of California vary in how much they say the drought has affected their families.

Great deal Somewhat						
Los Angeles County	9%	33%				
Orange County	25%					
San Diego County	6%	27%				
Inland Empire	8%	31%				
Central Coast	12%	29%				
Bay Area	7%	35%				
Central Valley	14%	32%				
North	17%		29%			

Poll conducted online in English and Spanish Aug. 9-15, among 9.254 California registered voters. Estimated margin of error, +/- 2 percentage points.

UC Berkeley Institute of Governmental Studies

David Lauter LOS ANGELES TIMES

The results indicate that people in farming areas have been feeling the effects of shortages more than those in other parts of the state, said Faith Kearns, a scientist with the California Institute for Water Resources.

"My sense is probably that in urban areas, people are largely buffered, even though in some regions, people have been asked to reduce their landscaping water and things like that," Kearns said. "But I think for most people, when they go to turn on the tap, the water still comes out. And so they aren't as deeply affected by it, if you're not in an area where you're seeing the effects of water shortage every day."

The poll found that Californians have some conflicting and unsettled opinions about agricultural water use. Surveyed voters statewide were split on whether they think farmers are "doing their part to reduce their water use to help the state get through the drought." Twenty-nine percent said yes, and 28% said no, while 43% said they don't know.

Voters also split when asked whether the state's residential users are doing their part, with 32% saying they are, 42% saying they are not, and 26% saying they don't know.

"Business and commercial water users" got a more negative grade, with 48% saying they aren't doing their part, compared with 13% who said they are and 39% who said they don't know.

The "no opinion" camp was larger (45%) when people were asked whether they believe California's drought rules and water restrictions are "being implemented fairly" for those three types of water users.

Kearns said she thought it was striking that many people had no opinion about whether agricultural water users are doing enough to reduce water use.

According to state data, agriculture uses about 80% of the water that is diverted and pumped in an average year in California, producing crops including hay, almonds, pistachios, walnuts, grapes, rice and many other fruit and vegetables.

Those survey responses, Kearns said, reflect "where water education and conservation campaigns have been focused, which is on individuals at the household level." And she said the results point to a need to further raise awareness about how water is used in California.

"The fact that so many people don't know what they think about ag water use, and to a lesser degree commercial water use, means that there is some work to do in terms of increasing understanding about more systemic water use issues," Kearns said.

Californians strongly agreed, in all regions and across all demographic groups, that the state's current water shortage is extremely serious. Those with the highest levels of concern included Democrats, voters 65 and older, and those living in the Bay Area and on the Central Coast.

California's extreme drought, now in its third year, is being exacerbated by rising temperatures with global warming. A new water-supply plan released this month by Gov. Gavin Newsom laid out a series of actions aimed at preparing for an estimated 10% decrease in California's water supply by 2040 as climate change continues to bring hotter, drier conditions.

Many Californians seem to agree it's time to get rid of thirsty grass and switch to droughttolerant landscaping. Seventy-two percent said they think it is important for homeowners to make permanent landscaping changes by removing lawns and putting in plants that don't require much water.

On this and other questions related to water policies, there were differences between Democrats and Republicans, and between voters who describe themselves as liberals and conservatives. When asked about removing lawns, 85% of Democrats said they think such landscaping changes are important, while only 49% of Republicans agreed. Republicans were also more likely to say California's water restrictions are being implemented unfairly.

DiCamillo said he thinks these differences mainly reflect how conservatives and Republicans "are less apt to support these kinds of restrictions on what you're able to do with your own life and your own property."

The partisan gap was smaller than on many other issues, however, and a majority across the political spectrum agreed on the seriousness of the water situation.

"It's pretty hard to find things where a majority of people agree these days," Kearns said. "People obviously really care about these water issues." In another question, voters in L.A. County were asked: "Do you believe that you and your household are already doing all you can to conserve water?" Seventy-two percent said yes, while 20% said no and 8% said they didn't know.

Compliance with water restrictions

Only about one in eight Los Angeles voters say current water restrictions are difficult to comply with. But nearly three-quarters say they're already doing all they can to conserve.



Poll conducted online in English and Spanish Aug. 9-15 among 9,254 California registered voters and 4,538 in Los Angeles County. Estimated margin of error, +/- 2 percentage points for the statewide sample and 2.5 points for the county sample. UC Berkeley Institute of Governmental Studies

David Lauter LOS ANGELES TIMES

"If you feel like you've done all you can in terms of changing your landscaping and taking shorter showers and doing all of that kind of stuff, but there's still this water shortage, then where are you left?" Kearns said. "To me, it gets into more of these large-scale issues like agricultural and commercial water use, and the sense that people feel like they don't actually know whether those sectors are taking enough action."

"It speaks to this idea that maybe we need a little bit more of a systemic look at water use in California on a broad scale, and that residents are probably actually pretty ready to have a deeper understanding, beyond their own households, of water in the state," she said.

The poll was conducted online in English and Spanish from Aug. 9-15 and surveyed a random sample of 9,254 California registered voters. It has an estimated error margin of 2 percentage points in the statewide results, and 2.5 percentage points in the results for L.A. County.

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Times Senior Editor David Lauter contributed to this report.

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Can area's drought, housing cohabitate?

Experts say yes, but region must continue finding water savings and supplies as it strives to build enough units to stem homelessness, meet state mandates Mercury News | August 22, 2022 | Ethan Varian

When Contra Costa County supervisors last summer signed off on 125 new homes slated for 30 acres of grazing land in the oak-dotted Tassajara Valley, they were warned water was going to be an issue.

Officials with the East Bay Municipal Utility District made clear they opposed extending the agency's service boundary to send water to the proposed single-family subdivision just east of Danville, especially given the ongoing drought.

Supervisors pushed ahead anyway, and the utility district promptly sued to halt development plans.

"If there's a request for us to provide water outside our service area, we typically oppose, and the reasoning would be that we recognize water is not limitless," said EBMUD spokesperson Andrea Pook.

The fight over Tassajara Parks illustrates the challenges the Bay Area faces in its push to build more homes to ease its housing affordability crisis at the same time local water systems are under strain by a warming climate and years of drought. But experts and municipal planners say the region can still balance its water and housing needs well into the future — as long as it continues to bolster conservation efforts for homes and businesses while promoting denser development and finding sustainable ways to increase water supply.

"If we don't get more efficient, we'll be in huge trouble," said Laura Feinstein, sustainability and resilience policy director with Bay Area think tank SPUR. "But with very achievable increases in efficiency, (meeting future demand) is totally doable."

Starting in 2023, the state will require the Bay Area to approve over 441,000 new units by 2031, more than double the region's current eight-year housing goal.

The Association of Bay Area Governments — which allocates housing targets across the region — said in a statement that plans to focus growth in areas with existing water infrastructure, unlike the Tassajara Valley, could "ease water supply issues." The agency also pointed to building more multifamily housing, which uses half as much water per household outdoor areas as single-family homes.

Water-saving home appliances, high-efficiency fixtures and drought-tolerant landscaping — all increasingly common in new developments — will also be key solutions, experts say. Already, state and local policies such as requiring low-flow toilets have helped bring down water use across the Bay Area, even as its population has exploded in recent decades.

In EBMUD's service area, for instance, the population has increased 34% since 1970, to 1.4 million people, but urban water use has dropped 42%, according to the district.

"The reality is in California, we've really decoupled water use and growth," said Heather Cooley, water program director for the nonprofit Pacific Institute in Oakland.

A recent report by the institute found adopting more water-efficient technologies could further bring down demand in California's urban areas by 30%-48%. Another report by SPUR found such conservation efforts could enable the Bay Area to meet water needs through 2070, without finding new sources. But to boost supply, both reports suggested investing in recycled water, which is often used for irrigation, and stormwater capture.

All of that will cost money, of course. This month, Gov. Gavin Newsom announced a plan to fund recycled water projects, desalination plants and reservoirs, plus rebates to replace lawns with native plant gardens or turf.

Despite new conservation programs in recent years, some agencies have resisted or blocked development because of drought or other water concerns.

Pook with EBMUD declined to comment on the Tassajara Parks project, citing the ongoing lawsuit. But she said the district has since at least the 1980s rejected most developments beyond its service boundary. The policy helps ensure the district has enough water for its customers in Alameda and Contra Costa counties through 2050, she said, or until its service population reaches 2 million.

"If the drought was not here today, we would still say no," Pook said of Tassajara Parks.

In 1999, EBMUD settled a similar lawsuit with Contra Costa County over extending the district's service area to part of the 11,000-home Dougherty Valley subdivision in nearby San Ramon. A neighboring water district eventually agreed to service the project.

Two additional lawsuits — one by environmental groups and one by the city of Danville — have also been filed to halt Tassajara Parks, each arguing the development violates the county's urban growth boundary. Neighbors, who have long pushed back on growth while facing their own water supply issues, gathered 5,400 online signatures against the project.

Farther north, Marin County's main water district last summer weighed an emergency pause on new water connections after its local reservoirs fell to dangerously low levels. On the Monterey Peninsula, meanwhile, the primary water supplier has imposed a decade-old ban on water hook-ups to protect the overdrawn Carmel River, halting most development. And in East Palo Alto, the City Council in 2016 phased in a two-year moratorium on new projects, blaming a small water allocation from San Francisco's water utility.

Still, experts say those examples don't reflect the situation for most of the Bay Area. That's mainly because unlike the North Bay and Central Coast, which rely on more precarious local water sources, the region's population centers get most of their water from massive reservoirs fed by runoff from the Sierra Nevada — though a significant portion of the South Bay's water supply is local.

"That's really how the Bay Area has prospered because we claimed the right to this water a hundred years ago," said Feinstein, the policy director with SPUR.

The largest water user in the entire state, however, is agriculture, accounting for 80% of all consumption. Any attempt to shift some of that water for housing, said Cooley with the Pacific Institute, would mean paying farmers for rights to their water while weighing the impact on agricultural communities if fields go fallow.

"It sounds simple — clearly there's water to be had there — but there are challenges," she said.

A more practical solution, Cooley said, is charging developers fees for conservation programs to offset new water demand created by their projects, similar to a plan approved by Contra Costa County for Tassajara Parks.

Under the contested plan, EBMUD would use the fee to fund off-site projects that save two gallons of water for every one used by future homeowners. The Tassajara developers, FT Land, Meach, BI Land and TH Land, would also install water-efficient appliances and native landscaping that can be irrigated by recycled water.

Contra Costa County Supervisor John Gioia, a former president of EBMUD's board of directors, who voted for the project, highlighted those measures as examples of how to build in times of water scarcity, even if they failed to win the water district's support.

"We're faced with a crisis of homelessness and housing," he said, "and that means we absolutely need to find answers to the water crisis."

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Does the Bay Area have enough water to build housing during the California drought?

Experts say yes, but the region must continue finding new water savings and supply Mercury News | August 18, 2022 | Ethan Varian



DANVILLE, CALIFORNIA – AUGUST 18: Property along Camino Tassajara in the Tassajara Valley which may be developed into 125 new homes in Danville, Calif., on Thursday, Aug. 18, 2022. (Nhat V. Meyer/Bay Area News Group)

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All of that will cost money, of course. This month, Gov. Gavin Newsom announced a plan to fund recycled water projects, desalination plants and reservoirs, plus rebates to replace lawns with native plant gardens or turf.



DANVILLE, CALIFORNIA - AUGUST 18: Cows graze on property along Camino Tassajara in the Tassajara Valley which may be developed into 125 new homes in Danville, Calif., on Thursday, Aug. 18, 2022. (Nhat V. Meyer/Bay Area News Group)

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SAN JOSE, CALIFORNIA – August 17: Construction workers work at a residential development site on North First Street in San Jose, Calif., on Wednesday, Aug. 17, 2022. (Dai Sugano/Bay Area News Group)

Still, experts say those examples don't reflect the situation for most of the Bay Area. That's mainly because unlike the North Bay and Central Coast, which rely on more precarious local water sources, the region's population centers get most of their water from massive reservoirs fed by runoff from the Sierra Nevada – though a significant portion of the South Bay's water supply is local.

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Tuolumne River Trust Questions Worst-Case Drought Scenario Plan

The Independent | September 1, 2022 | David Jen



Photo courtesy of watereducation.org

Alameda County – Peter Drekmeier, Tuolumne River Trust policy director, urged the San Francisco Public Utilities Commission (SFPUC) last week to reconsider the parameters of its Design Drought plan, which serves as a worst-case drought scenario for the commission's policy decisions.

Drekmeier, who presented at the commission's Aug. 23 meeting, argued that the SFPUC's use of a hypothetical 8.5-year drought unnecessarily withholds water releases into the Tuolumne River – from which the Tri-Valley sources the majority of its water – and consequently damages the ecosystems there.

"The problem is we've altered the ecosystem from what favors the native fish and wildlife to non-natives," said Drekmeier in an interview with The Independent. "And the slow-moving, warm, stagnant water creates toxic algae blooms in the delta – cyanobacteria that produces neurotoxins – which can kill pets and wildlife and can make people very sick."

Reduced Tuolumne flows also increase the salinity of the water in the Bay Delta.

Drekmeier described an 8.5-year drought as "much more severe than any drought known or projected through the modeling" and estimated the chance of such a long drought occurring at one in 70,000 years.

Planning based on a 7.5-year design drought, suggested Drekmeier, would alleviate some of these problems, while keeping the risk of zero water acceptably low at one in 10,000 years.

The SFPUC, which owns and operates the Hetch Hetchy Regional Water System, wholesales water to 26 water agencies in the Bay Area, such as the Alameda County Water District (ACWD), in addition to serving San Francisco customers directly.

At the meeting, SFPUC Assistant General Manager Steven Ritchie presented reasons the commission established the 8.5-year scenario.

"The purpose of the Design Drought is not to be a prediction," he said. "It's actually a stress test on our system. Its purpose is to examine how our system will perform under stress, so that water system managers can make informed decisions, including consideration of all obligations, both water supply and environmental, under difficult conditions."

Ritchie also cautioned against handling drought probabilities in the same way a city might hedge against a hundred-year flood.

"(Floods) tend to be transient problems, whereas running out of water supply is not something you can measure in that same way. It is a severe — virtually wipe-out — kind of alternative," he said.

While other Bay Area water wholesalers, such as the Tri-Valley's Zone 7 Water Agency, draw on groundwater reserves and the State Water Project for water, the project does not normally serve San Francisco. As such, Ritchie stressed that the City of San Francisco needs to rely on its own water storage.

"No one will step in to help San Francisco in an extreme drought," said Ritchie.

The rest of the Bay Area, however, may ask for help.

The ACWD, for example, typically purchases about 20% of its water from the SFPUC, but it "has relied more heavily on SFPUC during dry conditions and drought," said Ed Stevenson, ACWD general manager, including in the current drought, which began in 2020.

Commission President Anson Moran attempted to draw upon the commission's past experiences to explain his support for the 8.5-year plan.

"The concern about any tension or tradeoff that exists between reliability on the one hand and fish flows on the other is an old issue that we have thought about a lot and very deeply," he said.

Experience through previous droughts, continued Moran, most notably the severe drought from 1987 to 1993, brought about "a certain humility about using history for your water-supply planning."

Gov. Gavin Newsom released last month a state water supply strategy that described a possible 10% reduction in available water in California by 2040 due to climate change.

Additionally, a Lawrence Berkeley Lab study, published last fall in the journal Nature Reviews Earth and Environment, warned of low-to-no snow years in the Sierra Nevada as early as the 2040s.

"That's 85% of this system's supply," said Adrian Covert, senior vice president of Public Policy for the Bay Area Council. "The most responsible action is on the side of conservatism when managing our water supplies."

Moran said that the commission should continue the discussion, but on the water planning strategy as a whole, instead of just the Design Drought in isolation.

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Newsom's water strategy needs to go a step further

CalMatters | August 30, 2022 | Guest Commentary AUGUST 30, 2022

IN SUMMARY

We propose an approach to water management that treats the environment as a priority rather than a constraint on operations.

Two weeks ago, Gov. Gavin Newsom released his water supply strategy, which is designed to address California's warming climate and increasing drought intensity. Central to this strategy is expanding storage to capture water during wet periods and to help urban and agricultural users make it through dry times.

But why stop there? What about storing water for the environment?

In our recent Public Policy Institute of California report, titled "Storing Water for the Environment: Operating Reservoirs to Improve Freshwater Ecosystems," we explore how to do a better job of managing rivers that are affected by large dams and how to make restoring river health a primary objective of reservoir management.

Reservoirs are crucial for water management in California's highly variable climate. The construction and operation of dams, however, has taken a toll on the environment. Dams change water quality and flow timing, and they block access to high-quality headwater habitat. This — along with many land-use changes and the introduction of invasive species — particularly harms salmon and steelhead, two of California's most iconic and endangered fishes.

By law, dam operators are required to prevent or mitigate harm to river ecosystems and the native species that make use of them. The current approach to environmental management below dams relies on constraining water and hydropower operations, usually by requiring dam operators to meet minimum flow and water quality standards.

This constraint-based approach has neither improved the health of rivers and estuaries nor led to the recovery of native species populations. This approach is also notoriously complex, inflexible and hard to adjust, making it ill-suited to manage rapidly changing conditions. Moreover, these standards are the epicenter of water litigation.

We propose a change in course. Using a simple reservoir model, we demonstrate that ecosystem managers can achieve better environmental outcomes when they are granted a percentage of reservoir inflow along with a portion of storage capacity. Flexibly managed, this combination of inflow and storage leads to the most efficient use of environmental water.

We think our approach — which effectively grants assets to the environment that can be flexibly managed — is the better way to go. It treats the environment as the priority it is rather than a constraint.

Here's why this is a better approach: Research has demonstrated the importance of varying the timing and amount of streamflows to meet specific ecosystem functions. Everything from fish, insects and amphibians, to birds and plants rely on this variability. All are adapted to the first freshet in the fall, the winter flood pulses, the slow decline in spring flows as snows recede, and the low flows of summer. And all are adapted to the wet and dry cycles that are part of California's climate.

Storing water set aside for the environment in reservoirs allows ecosystem managers to vary flow releases to create the seasonal and year-to-year variability necessary for healthy rivers below dams. Done well, with good governance and investments in physical habitat, managing stored water also reduces uncertainties for both the environment and other water demands.

Several consequential regulatory and planning efforts in progress in the Central Valley would benefit from adopting this approach. These include:

- An update of the water quality control plan for the Sacramento–San Joaquin Delta and its watershed;
- Negotiations over voluntary agreements that seek to meet the objectives of the water quality control plan;
- Efforts to develop a coordinated operating plan for the Central Valley Project and State Water Project that protects endangered species; and
- Major investments of state funds in new storage and water for the environment.

All these efforts rely upon storing water in reservoirs to meet environmental requirements. And all will struggle to adapt to rapidly changing conditions as the climate warms and droughts intensify. We think reserving storage space and reservoir inflow for the environment is better than traditional regulatory approaches. And we recognize that this approach is novel — even risky — but we need to take some risks to manage growing threats to the health of our rivers and estuaries.

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Sarah Null is the 2021–22 CalTrout Ecosystem Fellow at the PPIC Water Policy Center.

Jeffrey Mount, a geomorphologist, is a senior fellow at the PPIC Water Policy Center. Jeffrey Mount previously has written about Gov. Gavin Newsom's water framework, the Endangered Species Act and the Klamath Basin dam removal.

California's Large Reservoirs Need Better Management

California Trout | August 29, 2022



PPIC Releases New Report, "Storing Water for the Environment"

As climate change and drought continue to intensify, aging infrastructure across California must be reevaluated. Specifically, California needs a new approach for managing large reservoirs, a new report from the Public Policy Institute of California "Storing Water for the Environment" argues. PPIC CalTrout Ecosystem Fellow Sarah Null was the lead author on this paper.

Reservoirs: the Benefits and the Harms

Reservoirs in California are important for the many benefits they provide: flood control, water supply, hydropower, and recreation. However, their construction and management also presents many environmental harms including loss of habitat for native fish above dams and degraded freshwater ecosystems below. The visual below shows fish species affected by dams that prevent them from reaching historic habitat. As freshwater ecosystems suffer, water users are also faced with regulatory uncertainty.



Dams have disconnected headwaters for salmon and steelhead throughout California. SOURCE: **PPIC Report Figure** 2, from Hanak et al. (2011). NOTE: The segments of rivers depicted in red are blocked to access by steelhead and salmon that historically made use of headwaters for spawning and rearing.

How California Can Better Manage Its Reservoirs

The new PPIC report outlines five key findings and approaches for better managing large reservoirs and improving California's freshwater ecosystems.

First, the report recommends making ecosystem health a primary objective of reservoir operations. Viewing ecosystem health as an objective of management instead of a constraint would enable better overall management of hydrologic uncertainty and ecologic risks.

To achieve this, the report recommends reserving storage space in reservoirs, and a share of inflow, for the environment. This approach creates an ecosystem water budget with more flexible management since release timings can be varied according to their maximum potential environmental benefit. It could also reduce regulatory uncertainty for water users.

There is also the need for a governance structure to effectively manage reservoirs. The best way to administer an ecosystem water budget would be through a designated trustee with the authority to allocate the water, prepare plans for its use, evaluate performance, and coordinate with all invested parties.

Funding is also necessary for creating and managing ecosystem water budgets. This could be delivered through a combination of water user and state support.

The final key finding of the report argues that many ongoing regulatory and planning efforts would benefit from reservoir storage space being set aside as part of an ecosystem water budget. One such example is the Bay-Delta water quality control plan. The report argues that all aspects of this plan could use water allocated to the environment more efficiently if they incorporated storage space for environmental water.

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Explore the full report below to learn more about better managing California's large reservoirs.

READ THE FULL REPORT
Western drought funding pushes feds and states to cooperate

How the Interior Department decides who gets what water could make or break the historic funding, experts say

Roll Call | August 25, 2022 | Valerie Yurk



An irrigation canal providing water to farmland near Parker, Ariz., in 2021. (Bill Clark/CQ Roll Call file photo)

The climate and social spending package boosted funding levels for Western drought mitigation projects to an unprecedented level — one that water advocates in the region say the U.S. may never see again.

But how the Interior Department decides who gets what water from the dwindling resources in the West, particularly in the Colorado River Basin that is facing a drought crisis, could make or break the historic funding, experts say.

The budget reconciliation bill signed Aug. 16 by President Joe Biden provides \$4 billion for Western drought and water projects. The money must be spent or locked into specific grants, contracts or financial agreements by Interior's Bureau of Reclamation by Sept. 30, 2026. That boosts total funding for drought relief to \$12.3 billion after the bipartisan infrastructure law provided \$8.3 billion.

And Congress is set to continue its focus on water in the West as House and Senate appropriators float more cash for programs like the WaterSMART grants, which they say will

assist Western states with drought. The House also passed a bill that would include even more Western-focused authorizations, including \$500 million to keep key reservoirs on the Colorado River, including Lake Mead and Lake Powell, from dropping to critically low levels.

"I can't recall a similar level of investment in Western water," said Doug Obegi, director of the California river restoration, water division and nature program at the Natural Resources Defense Council. "But it's kind of an inevitable conclusion for the Colorado River Basin."

For the past two decades the river basin has been suffering its worst drought in about 1,000 years, according to scientists. Its reservoirs, which provide drinking water for over 40 million people and is used to irrigate 15 percent of the nation's farmland, are at historically low levels. The two largest reservoirs in the United States, Lake Mead and Lake Powell, were at 28 percent and 26 percent of capacity, respectively, on Aug. 22, according to NASA's Earth Observatory.

"[Besides] Colorado River, a lot of our western watersheds, like the Rio Grande and the Klamath, they're all kind of facing a reckoning in terms of water availability, and just over the last 20-plus years, these systems have been just hammered by climate change," said Alex Funk, director of water resources and senior counsel at the Theodore Roosevelt Conservation Partnership. "I think that drove Congress to action because the implications are huge and significant."

But Washington has "kicked the can down the road" in addressing these problems, Obegi said, because Western states have become territorial over their water rights as the federal government attempts to curb water usage. Farmers, who have historically used upwards of 70 percent of the Colorado River Basin's water, are butting heads with environmentalists, who are advocating for reducing the number of water-intensive crops. As a result, Western states are engaged in fierce fighting over who should get what water.

The Biden administration ordered some water reductions for Arizona, Nevada and New Mexico this month after the states missed a deadline for submitting allocation plans, but it also gave the states more time to work out a compromise before initiating more severe cuts.

"There are a lot of times with water where you have to make choices, and you can't satisfy everyone," Obegi said. "Water that's diverted out of a river can't help the fish and wildlife that are downstream of that diversion."

In an attempt to prevent water levels in Lake Powell from dipping further, Bureau of Reclamation Commissioner Camille Touton announced a deal with the seven Colorado River Basin states in 2019 that hinged on the states saving 2 million to 4 million acre-feet of water — as much as a third of the river's flows — or the federal government would intervene.

States that have already seen cuts in their allocations, like Arizona, are arguing they've done more than their fair share to tackle water shortages.

"It is unacceptable for Arizona to continue to carry a disproportionate burden for reductions for the benefit of others who have not contributed," Arizona Department of Water Resources Director Tom Buschatzke and Central Arizona Project General Manager Ted Cooke said in a statement.

The new funding from Congress, although widely celebrated by Western states, is bound to highlight the issues that have been keeping the seven states in the basin from coming to an agreement. And a lot of it has to do with competing interests between farmers and environmentalists.

"Mandatory cuts are disproportionately going to affect the agriculture sector, especially in the lower basin," said Funk. "But our hope is that the \$4 billion creates an opportunity to think creatively about the future of farming in the basin."

Consumer demands

Daniel Keppen, executive director of the Family Farm Alliance, a Western nonprofit that advocates for small farmers, said that although many farmers are conservation-minded, they need water to meet consumer demands for food.

"It's not like the farmers are the ones consuming the water," he said. "That water is going into products that others are willing and want to purchase."

But proposed solutions from farmers and environmentalists tend to be at odds. Farmers, for example, have been cooking up proposals for voluntary, compensated and temporary programs that incentivize reducing water use, Keppen said. But Funk argued that temporary incentive programs don't fix the long-term drought issues.

Instead, Funk said he hopes the Bureau of Reclamation uses funding to promote creative solutions to water-intensive farming, like transitioning to a market for lower-water-use crops. But Keppen said that although farmers are typically open to trying new things if it improves the profitability of their operation, most producers are "bemused when certain outside environmentalists, urban interests and academics like to play the role of 'social engineer' and tell them what to grow."

There is hope for compromise. The Family Farm Alliance helped create the Western Agriculture and Conservation Coalition (WACC), a collaborative effort aimed at improving the environment while protecting Western irrigated agriculture, which includes agriculture industry representatives as well as national environmental groups like The Nature Conservancy and the Environmental Defense Fund.

Although there's interest in collaboration, the Bureau of Reclamation still has tough decisions to make over how to spend the money. As Obegi said, "You can't satisfy everyone," and many are already frustrated with the Biden administration for putting off federal involvement as part of the 2019 deal.

"Prior to passing the Inflation Reduction Act, things were looking pretty bleak and the states were not coming together, and now without a framework from DOI, cuts are going to be made," Funk said. "But the light at the end of the tunnel is this \$4 billion in funding."

Funk added that the unprecedented funding gives the Bureau of Reclamation an opportunity to look past temporary fixes and encourage creativity from states.

"I'm not saying this will solve all Western water problems," he added. "There are a lot of unknowns at this point ... it changes by the day. But there's a collective desire to fix the system."

"I hope this administration can handle feuds over what cuts," added Keppen. "The funding is there. Now we need to make sure the agencies look for opportunities to partner with farmers, ranchers and water managers to make the projects a reality on the ground."

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Drought conditions static in California as state's reliance on groundwater grows With reservoirs low and no drought relief in sight, the Central Valley has no choice but to continue drawing water from aquifers as issues facing groundwater mount.

ABC 10 | August 25, 2022 | Brody Adams

SACRAMENTO, Calif. — Nearly 17% of the state remains in exceptional drought conditions with the majority being in the San Joaquin Valley. The weekly drought monitor showed no changes to conditions in California.

The past month's monsoonal moisture improved conditions in portions of the Sierra Nevada and desert regions, but the majority of the state slipped further into drought.

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California

Credit: droughtmonitor.unl.edu No changes in this weeks version of the drought monitor

As the drought drags into its third year, many look to reservoir and river levels to gauge the severity of the drought. However, California's groundwater, our water "bank account," is the true measure of water security in California according to supervisory hydrologist Claudia Faunt of the United States Geological Service, .

"We have three main reservoirs, the snowpack, the reservoir and stream system, and then when water seeps into the ground, it's known as groundwater. It's kind of an invisible resource," Faunt said.

The California Department of Water Resources describes groundwater as an important source of water stored in the earth in spaces between sand, soils and fractured rock, known as an aquifer.

In drought years, when surface water resources like reservoirs and rivers run low, the Central Valley relies on pumping groundwater to supply its cities and farmers. Faunt said that the consecutive years of drought are where problems arise.

"In a lot of the areas, the groundwater has been overused to the extent that the basins are being depleted, so that when you have a drought, it exacerbates the system, where the water levels drop even lower," she said.

Reservoir levels are so low that, for a second year in a row, many irrigation districts are poised to receive none of their usual allocations of water from the Central Valley Project, according to a Stanford University Study.

Many communities are even overdrawing their aquifers to the point where basins are being depleted. The Central Valley has been subsiding, or sinking, for decades due to overdrawing of groundwater. When water is drawn out of the aquifer from wells, the ground compacts and sinks permanently.

This presents a problem for the existing infrastructure of these sinking areas.

The Delta-Mendota canal, a key component of the Central Valley Project, plays a critical role in delivering water to 1.2 million acres of farmland in the San Joaquin, San Benito, and Santa Clara valleys and delivers water to more than 2 million Californians, according to the California Department of Water Resources.

The area that the canal runs through suffered over 29 feet of subsidence from 1925-1977, according to the USGS. Faunt said subsidence has canals moving water up a slope, meaning they can't deliver as much water as they were originally intended to do.

When it comes to goals of recharging aquifers and tackling groundwater issues, she thinks there's still a way reach them.

"There's two ways to get at that bank account, put more water in or stop taking as much water out. I think we can get there," Faunt said. "But I think it's going to take both sides of that equation. Whether it's irrigating more efficiently or transitioning to different crops, or even overwatering the areas facing subsidence during wet years to recharge the systems, I think it is doable."

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Is SF Hoarding Water? One Environmental Group Wants the City To Get Real About Its Planning

The San Francisco Standard | August 23, 2022 | Sarah Wright



The confluence of the San Joaquin River, left, and Tuolumne River, right, along the Dos Rios Ranch Tuesday, Sept. 21, 2021 in Modesto, Calif. | Brian van der Brug / Los Angeles Times via Getty Images

An environmental group is arguing that the city's water agency is taking too much water from the Sierra Nevadas and that its drought planning will wind up hoarding water unnecessarily and hurting vulnerable river ecosystems.

The group, Tuolumne River Trust, says its pleadings have fallen on deaf ears up until now. But with the state mulling the Bay Delta Water Quality Control Plan, which would reduce the city's rights to water from the Tuolumne River, the question of whether San Francisco controls more than its fair share of water is back up for discussion and spilled over into a meeting of the San Francisco Public Utilities Commission (SFPUC) on Tuesday.



The Tuolumne river near Hickman, Calif. | Getty Images

Now, the Tuolumne River Trust is arguing that the SFPUC, which controls an extensive water network in Northern California and owns the Hetch Hetchy Reservoir, is relying on a worst-case drought model that is much too conservative—even in light of climate change—to justify claims it needs to divert more than its fair share of water from the Tuolumne River.

This model—created by the SFPUC in the early 1990s—is called a "design drought" and maps out worst-case drought scenarios so the agency can plan accordingly in the long term. The estimates influence how much water the agency aims to keep in storage by diverting water from the Tuolumne. It's also part of the agency's argument against the Bay-Delta plan, which has yet to be implemented. In a lawsuit, the SFPUC and other cities argue that the Bay-Delta plan doesn't provide them with enough water.

The SFPUC's overly aggressive diversion, in the eyes of the Tuolumne River Trust, is the reason the lower Tuolumne River has become slow and warm, diminishing Chinook salmon and steelhead trout populations and the vibrant ecosystems they support.

"We're starving the environment for this arbitrary design drought," said Peter Drekmeier, policy director of the Tuolumne River Trust, in an interview. "The science tells me now that this is overkill."

The SFPUC's estimates plan for a drought lasting 8.5 years and assumes water demand of about 250 million gallons per day. But the worst drought on record here was just six years long, from 1987 to 1992. And while demand was closer to 290 million gallons per day during that time, it's been going down, not up: water demand has since fallen to about 200 million gallons per day.

Drekmeier is pushing for the agency to plan for 7.5 rather than 8.5 years of drought as a more realistic estimate. As for climate change, Drekmeier used data pulled from SFPUC's own climate study to argue that warming could actually benefit the city's water supply in drought years: As the seasons shift earlier with warming, so too would peak runoff times, filling the Tuolumne during the limited window in the spring when SFPUC is allowed to pull its biggest share of water.

SFPUC General Manager of Water Steve Ritchie disputed that argument, saying that climate science isn't conclusive on exactly how water supplies will be affected. Members of the SFPUC didn't appear convinced by Drekmeier's arguments nor ready to redo the "design drought," though members said they were open to keeping the discussion going and even revisiting their demand assumptions.

Ritchie said that the water agency would rather be safe than sorry in the event of a serious drought. The agency, which supplies water to 2.7 million customers in the city and Bay Area, relies so heavily on its storage that in case of an emergency, it would literally be left out to dry, Ritchie said. That guides its emergency planning, as does the unpredictability of climate change.

"It doesn't pay off at any time to assume the next year or two will be wet," Ritchie said. "We have to assume they will be dry."

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Santa Clara County dam faces growing opposition

San Jose Spotlight | August 28, 2022 | Jana Kadah



Valley Water is looking to expand Pacheco Dam to hold hundreds of thousands of acre-feet of water. Photo courtesy of Valley Water.

The opposition against the Pacheco Dam expansion in South County is growing—and so is the list of plaintiffs suing Valley Water over the project.

This week, the environmental advocacy group Sierra Club and the Amah Mutsun Tribal Band have added their names to the Stop Pacheco Dam Coalition, which is suing Valley Water. The lawsuit, first filed in June by environmentalists and landowners, challenges the water district's reliance on environmental exemptions, arguing it will result in grave environmental consequences.

"Valley Water is cutting corners on the environmental review for these investigations and acting like they have no impact when in fact, they do. They would require mitigation and avoidance measures if you were to carry them out," Osha Meserve, a Sacramento attorney representing the dam opponents, told San José Spotlight. "This is a very wild and sensitive area, so running around with a bunch of trucks and helicopters and digging holes does have impacts."

Valley Water wants to repair and expand the size of the Pacheco reservoir and dam atop the remote Pacheco Pass in Santa Clara County from 5,500-acre feet of water to 140,000-acre feet of water. This would be roughly 25 times the original size and could flood up to 1,500 acres. It's a massive undertaking that would cost \$2.5 billion and take a decade to complete. Right now, the water district is determining the best way to engineer the dam.

Geological work includes drilling 226 borings and digging 57 test pits up to 20 feet deep over the next eight to 17 months on various properties, including several private ranches that would be

flooded by the dam, according to the lawsuit. Trucks, trailers, heavy equipment and helicopters would traverse the Diablo mountain range—an area plaintiffs say is rich in biodiversity and cultural resources. The coalition also claims Valley Water could take private property through eminent domain.

Valley Water officials say their plan is within the law and necessary as the county endures another drought. The new dam will hold enough water to supply 1.4 million residents for a year in an emergency. The existing dam, built in 1939, was listed as "high hazard" in 2019, meaning it could break and have catastrophic impacts in the area. Valley Water emptied the reservoir, but instead of repairing the dam, they want to expand it.

Weathering droughts

Officials say the expansion will reduce the frequency and severity of water shortages during droughts because it could capture and store more water during wet years. They also say a larger dam will protect the drinking water supply and infrastructure and improve fish habitats.

Valley Water directors move ahead with Pacheco Pass dam as price skyrockets "Valley Water is exploring ways to secure enough water to help our communities weather future droughts. These efforts include increasing Santa Clara County's use of purified water and evaluating a variety of water storage projects, including the Pacheco Reservoir Expansion Project," spokesperson Matt Keller told San José Spotlight. "Valley Water has complied with all environmental requirements for this work and will continue to do so for the length of this project."

But plaintiffs argue the water district is skirting the 1970 California Environmental Quality Act (CEQA) that requires detailed studies of major construction projects.

The water district is doing the investigative geological work without an environmental impact review or CEQA because Valley Water officials say the drilling and digging will not have significant impacts on the land. Under state law, CEQA is not required if there is minimal impact.

Because Valley Water is the lead agency on the dam project, it can create its own environmental impact review. Last year, the California Water Commission voted to grant the project nearly half a billion dollars because it published a draft of the environmental impact review and secured other sources of funding by Dec. 31. So far, the water district has \$506.6 million secured—a fifth of the project's total cost. None of the dollars are from the federal government.

But the Stop Pacheco Dam Coalitions says the investigation will undoubtedly have environmental consequences.

Environmental, tribal impacts

The dam site is fairly secluded, with little to no roads. There are several threatened and endangered species that would be harmed by the geological work, said Katja Irvin, who leads

the water committee of the local Sierra Club chapter. This includes California red-legged frogs, the California tiger salamander and special status plant species like the Lemmon's jewelflower and Arburua Ranch jewelflower.

"The California red-legged frog is one of the most sensitive species in the area that may be impacted," Irvin told San José Spotlight. "The movement of equipment will involve crossing streams which could directly impact frogs and frog habitat at the crossing locations."

Irvin said it could also impact water quality downstream by releasing sediment and introducing toxic materials. Runoff from these locations could also impact streams and seasonal wetlands in the areas that serve as frog habitats.

Valentin Lopez, tribal chair of the Amah Mutsun, said in addition to the environmental impacts, the Pacheco Dam project will damage the indigenous population's cultural sites including its burial grounds.

"It's important that our tribe opposes the dam and protect and preserve the resources and the burial grounds of our ancestors," Lopez told San José Spotlight. "We recognize the intent of the dam is to provide water, but there are alternatives and rules the (water district) is not considering."

The lawsuit is part of a bigger opposition against the dam. The coalition believes the project poses too great a risk financially, without solving Silicon Valley's water challenges.

"We think the dam project would be terrible for the environment, terrible for ratepayers and not help with water supplies that Valley Water says it needs. That's our bigger target," Meserve said. "But we think the investigation part is an important step along that pathway. We're trying to force Valley Water to do it correctly if they're going to do it at all."

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Why California's largest reservoir in nearly 50 years may be derailed by water shortages SF Chronicle | August 26, 2022 | Kurtis Alexander



The rural community of Sites in Colusa County is shown in an aerial photograph on Aug. 9. An independent water authority is working to build a larger reservoir here and deliver supplies across California. Carlos Avila Gonzalez/The Chronicle

SITES, Colusa County — Deep in California's farm country, this dusty valley ringed by brown hills and sunny skies is seen by many as the state's answer to drought.

Here, about 70 miles north of Sacramento, a coalition of water agencies is setting out to build the first major reservoir in California in nearly half a century. The \$4 billion plan calls for flooding miles of ranchlands with flows from the nearby Sacramento River and sending the water to cities and irrigation districts as far away as the Bay Area and Los Angeles.

Much of the money is already lined up, and as state water shortages have intensified, the project has won increasing bipartisan support, including from Gov. Gavin Newsom.

But there's a problem: There may not be enough water to fill the new reservoir.

In a letter sent out by state regulators Friday, project officials were told that their application for a water right is incomplete because they failed to show that there's sufficient flow to draw from in the Sacramento River. The Sites Project Authority, the agency formed by the water suppliers to get the reservoir built, has 60 days to strengthen the application.

The opinion of the State Water Resources Control Board is not only a setback for the reservoir, it underscores the challenge that California faces in sustaining water supplies for 39 million people and a

nearly \$50 billion farming industry. Most of the state's rivers and creeks are already overdrawn, and in some spots the natural environment, including fish and wildlife, is degraded because of too little water.

The situation will only worsen as things get hotter and dryer with climate change.

The Sites Project Authority says it's undeterred by the state's letter. Project officials hope to address the concerns, and they remain confident in their application for a water right, which is probably the biggest hurdle and most important step to getting the reservoir off the ground.

"I didn't hear any hard-stop issues," Jerry Brown, the project authority's executive director told The Chronicle. Brown, who is not related to the former governor with the same name, said his staff would get right to work on amending the application.

On a recent afternoon, Kevin Spesert, the on-site manager for the Sites Project Authority, made the short drive from the rural town of Maxwell along Interstate 5, where he has an office, to the community of Sites, basically a cluster of homes and trailers surrounded by cattle ranches.

"This would all be underwater," Spesert said as he steered his white pickup over a small notch between hills and into the valley where the reservoir is proposed.

For decades, this site has been eyed for water storage. Except for a few gaps in the surrounding ridgeline, the area is naturally a near-perfect bowl, about 13 miles long and 4½ miles wide at its broadest, making it ideal for holding water.



Canal via new connector

in Dunnigan (34 miles) 🔻

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Graphic: John Blanchard / The Chronicle

MILES

Source: Sites Project Authority

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The plan is to plug the low points in the ridge with dams: two major ones, about 300 feet tall, and a handful of smaller ones. Pumping plants and pipelines would then be constructed to fill the basin with water from the Sacramento River through a network of existing irrigation canals.

More for you California drought: Why more than 530,000 acres of farmlands are now left barren

Unlike most older reservoirs which were built on top of rivers, the proposed "off-stream" facility has the advantage of not damming a major waterway and directly interfering with river currents or fish. Proponents say the project could even benefit fish by releasing water when they need it. The reservoir would offer 1.5 million acre-feet of storage, officials say. That's about enough water for 3 million households for a year. It would be the eighth largest reservoir in California, and the first one built with more than a million acre-feet of capacity since New Melones Lake was constructed by the federal government in the late 1970s.

"I remember my dad talking to me about how he watched the building of Oroville Dam," Spesert said in a nod to the nostalgia of the West's dam-building frenzy of the mid-20th century. "Looking at this (valley) now and thinking that it will also become a big reservoir ... it's something that will benefit all of California."

Once filled, the new reservoir would release water similarly to how it came in, mostly through the infrastructure of local irrigation districts. After it's back in the Sacramento River, the water would flow south to the Sacramento-San Joaquin River Delta, where giant pumping stations could push it through pipelines and aqueducts across the state.

The roughly 30 urban and agricultural water agencies investing in the project would have first dibs on the new supply. In the Bay Area, the reservoir's backers include Santa Clara County's Valley Water, the Tri-Valley's Zone 7 Water Agency and the city of American Canyon, which combined serve about 2.3 million people.

Project officials say they hope to finalize the environmental review for the reservoir this year, begin site preparation in 2024 and start delivering water at the end of the decade.

Before any construction can begin, the project needs several local, state and federal approvals. None are as fundamental as the water right.

In May, the Sites Project Authority applied for a permit to take water from the Sacramento River, south of Shasta Lake. Because there are already so many water rights holders on the river, project officials are seeking permission to draw only during the wetter months — not summer — and only after the needs of other water users and fish, namely salmon, are met.

Project officials say that even with these limitations, wet years and big storms during dry years will provide enough water to fill the reservoir. Furthermore, they say because climate change is prompting bigger, more intense bouts of rain as well as reducing the snowpack that's historically acted as a reservoir by holding water until the dry summer months, there's greater need now for new storage.



Kevin Spesert, with the Sites Project Authority, explains how water would be piped into the proposed Sites Reservoir at his office in the town of Maxwell (Colusa County). Carlos Avila Gonzalez/The Chronicle

Friday's letter from the State Water Board, however, says that the Sites Project Authority's water analysis is missing key details on Sacramento River flows and doesn't consider all the factors it should. The omissions include how much water is being taken from the river by senior water holders and the state's Bay-Delta Plan, which seeks to increase flows cumulatively in California's rivers. Both of these items could affect the amount of water available for the reservoir.

While the letter says the project's water right application is officially accepted, the state will only move forward with formal proceedings if and when project officials make their case for sufficient water.

"It has been this administration's priority to move more quickly on regulatory permitting," said Erik Ekdahl, a deputy directory who oversees water rights for the State Water Board. "At the same time, this is a big investment, and that means we should really take the time up front to make sure we have the technical details right."

Critics of the proposal have long questioned the wisdom of building more reservoirs. The opponents, who include environmentalists, fishermen and Native American communities, cite California's chronically low rivers and creeks and the fact that the state already has nearly 1,500 reservoirs capturing flows.

"They're not creating any more water with this project," said Caleen Sisk, chief of the Winnemem Wintu Tribe, which historically lived across much of the Sacramento Valley. "It's not like there's a groundswell of new water, a river developed or something. They're just trying to take out more."

Sisk worries that a lack of water will leave the reservoir's supplies sparse and subject to becoming warm under the hot sun and filled with harmful algal blooms, which could move into the river when water is released there. It's a concern that's been echoed in comments by the U.S. Environmental Protection Agency. During droughts, cyanobacteria is common in shallow lakes and reservoirs.

Opponents of the proposed reservoir, in general, prefer alternative means of acquiring and storing water in California, such as building desalination plants, recharging aquifers and doing more water recycling — areas that Newsom's administration is also supporting, as reflected in a state water plan released in August.



A farm sits near the location of land once owned by John Sites, the namesake of the community where Sites Reservoir is proposed. The area would be submerged under the reservoir plan. Carlos Avila Gonzalez/The Chronicle

Perhaps the biggest criticism of Sites Reservoir is the harm it could pose for fish, notably chinook salmon. Though the facility would not directly cut off fish passage and could send more water into the river when it suits salmon, critics say taking more water from the Sacramento River, on balance, will hamper fish migration.

Salmon in Northern California already are struggling from diminished flows. The Sacramento River's fall run, which drives the commercial salmon industry, has declined in recent decades while the endangered winter run remains on the verge of extinction. Drought years have been particularly difficult for the fish.

"The big fight at the water board is going to be how much water will be taken and when," said Doug Obegi, a senior attorney at the Natural Resources Defense Council, who believes the diversions proposed by the Sites Project Authority are too high to ensure adequate fish protection."There's general agreement that we should take more water in wet periods and less in dry periods, but no one agrees on what constitutes a big gulp, a little sip and when it's wet and when it's dry."

In Maxwell, the nearest community to Sites with gas and groceries, most residents appear eager for the reservoir and the water to fill it.

The small town's ag-based economy has been hit hard by drought. Much of the surrounding farmland has descended into weed-dotted dirt and grim earth-tone hues. About 90% of Colusa County's rice fields, which typically dominate the region, were fallowed this year because of the water shortage, according to the local farm bureau.

"It's no different than a tornado coming through and taking out a town in the Midwest," said Cy Hawkins, a hog farmer who runs an insurance agency on Maxwell's two-block-long main strip. "It's a catastrophe here. And it's a terrible failure on the part of the state and federal government that they haven't built any new water storage."

This year, Hawkins is on track to provide more payouts for crop insurance than any time in his 35 years in the business.

Outside of town, Jim Traynham runs cows on rangeland that would be submerged by the project, and still he wants to see the reservoir built. Project officials count about 70 parcels in and around Sites that will need to be acquired to move forward with the facility. Owners are mixed about whether they want to move out.

"It's tough, but you got to do what's right," Traynham said. "Our community is suffering desperately. We are entirely dependent on agriculture, and we need more water."

Local water agencies, including the Glenn-Colusa Irrigation District, are investors in the project and stand to have more water to provide area growers.

The project's biggest backer is the Metropolitan Water District of Southern California, which serves Los Angeles and the nearby counties. The agency lays claim to 30% of the reservoir's future water. The allocations are based on the level of investment.

The Zone 7 Water Agency is the largest investor in the Bay Area, poised for 6% of the reservoir water. The wholesaler, which supplies about 266,000 people in Pleasanton, Livermore, Dublin and San Ramon, has contributed \$2.45 million to the project since 2016 and expects to put up another \$4 million through 2024.

The total cost of the reservoir, which is estimated at just under \$4 billion, will be partly covered by \$875 million in voter-approved bonds and a yet-to-be-determined outlay by the federal Bureau of Reclamation. Additionally, the U.S. Environmental Protection Agency has preapproved a \$2.2 billion loan. But the outstanding balance as well as the debt payments would remain the responsibility of the participating water agencies.

"Even before this drought and before climate change, we knew we needed to invest in additional water supplies," said Valerie Pryor, general manager of the Zone 7 Water Agency. "Right now, we are living off of our storage, and that will last us another few years. But we can't live off this forever."

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State unveils latest environmental documents meant to push controversial Delta Tunnel ahead

Sacramento News & Review | August 23, 2022 | Dan Bacher



Sun falls on the town of Freeport in Sacramento County at the gateway to the North Delta. Photograph by Scott Thomas Anderson

The California Department of Water Resources, or DWR, has released the Draft Environmental Impact Report for the embattled Delta Tunnel, beginning the 90-day public comment period from July 27 to October 27 for what conservationists describe as an "environmentally destructive project."

According to project opponents, different versions of this same gigantic and wasteful public works project — the Peripheral Canal, the Bay Delta Conservation Plan, the California Water Fix and now the single Delta Conveyance — have cast a dark, toxic shadow over California water policy since it was first decisively rejected by California voters in November 1982 as the Peripheral Canal.

While tunnel advocates claim the tunnel will protect the reliability of water transport infrastructure, address the impacts of sea level rise, and improve the Delta's aquatic conditions, critics say the project will do none of these things, instead hastening the extinction of Sacramento River winter and spring-run Chinook salmon, the Central Valley steelhead, the Delta and longfin smelt, and the green sturgeon. It's feared these fish species will die off as the multi-billion tunnel keeps indebting Californians for generations to come.

Those fighting the tunnel, including indigenous tribes, environmental justice advocates, anglers and Delta farmers, have also expressed little faith that the Draft EIR will address any of the questions and concerns they raised repeatedly during their work with the Stakeholder Engagement Committee for the Design Construction Authority during that two-year tunnel planning process.

The Draft EIR was prepared by DWR as the lead agency to comply with the requirements of the California Environmental Quality Act, which is supposed to involve evaluating a range of alternatives to the proposed project. The process should also include disclosing potential environmental effects, as well as associated mitigation measures, according to an announcement from DWR.

The agency claimed that "no decisions will be made" until the conclusion of the environmental review process, after consideration of public comments submitted on the draft. At that point, DWR will determine whether to approve the proposed project, an alternative or no project.

"The purpose of the proposed Delta Conveyance Project is to upgrade the aging State Water Project water transport infrastructure in the Sacramento-San Joaquin Delta," the agency said in a statement, adding that it wanted to "minimize water supply disruption caused by an earthquake and provide operational flexibility to improve aquatic conditions in the Delta."

"Two out of three Californians rely on the State Water Project for all or part of their water supply," DWR Director Karla Nemeth mentioned in her own release. "Modernizing this infrastructure is essential to adapting to a future that includes more frequent extremes of drought and flood, and greater water instability."

Additionally, Nemeth claimed, "If the project had been operational during the big storms in October and December of 2021, DWR could have captured and moved about 236,000 acre-feet of water. That is enough for about 2.5 million people for a year. If approved after completion of the environmental review process, the project will also help California manage through periods of severe drought like the one the state is experiencing now."

Nemeth summarized DWR's work in the last three years as attempting to "refined, redesigned and rerouted" the project under the Governor's 2019 direction.

"We took a fresh look at everything," she asserted. "Changing from two tunnels to one opened the door to many creative design and engineering innovations."

In response to the draft being released, the Sierra Club said that it is "working hard to review the document and begin the process of commenting." The nonprofit will host a workshop in the next couple of weeks to assist Californians and answer any questions about the comment process.

The Sierra Club continues to stress that the tunnel's construction would "significantly harm the important biodiversity of the Bay-Delta region," and cost California taxpayers between \$16-40 billion.

"Sierra Club California strongly believes this flawed project is incredibly wasteful," said Brandon Dawson, director of the statewide club. "Climate change continues to impact the state's hydrology, and there is no certainty as to the amount of water that will be available for the project when it's completed. We will be closely examining the draft EIR alongside our environmental partners for new information on the anticipated impacts of the project for frontline communities, Tribes, and the vital ecosystem of the Bay-Delta."

Dawson also noted, "We encourage the Newsom administration to fully shift the DWR's attention to sustainable water management efforts that are environmentally beneficial and will work to build regional resilience, including conservation, efficiency, recycling, and stormwater capture."

Restore the Delta's executive director, Barbara Barrigan-Parrilla, also criticized the release of the Delta Tunnel draft EIR.

"This plan is so massive, it will be delivered to us on thumb-drive: A full review of this mountain of paper is simply not possible for Delta communities, environmental justice groups, or Northern California tribes in just 90-days," Barrigan-Parrilla observed. "As we read, we will be looking for answers to the questions we raised during our work with the Stakeholder Engagement Committee ... Delta communities raised concerns about water quality, salinity intrusion, pollution mitigation, and significant air pollution impacts resulting from construction and operation of the project. DWR needs to speak frankly about the sacrifices expected of the people of the Delta for this project to advance."

Restore the Delta went on to point out that the State has only recently begun to hold workshops on salinity intrusion into the estuary, which is also part of climate change planning, and that there is "no framework for what a just transition for the Delta would entail.".

Scientist Deirdre Des Jardins, of California Water Research, views the impact of climate change as a huge issue regarding the draft EIR for the Delta Tunnel.

"I included the NOAA 2022 estimates of probabilities of high sea level rise, which are less than 1 meter by 2100, except for scenarios with high or very high GHG emissions," Deirdre Des Jardins explained in a recent analysis. "These could lead to warming of up to 5 degrees C by 2100. Many scientists think that level of warming would be catastrophic for the planet and human civilization. I cited the August 1, 2022 letter in the Proceedings for the National Academy of Sciences which points out that 5 degrees C of warming which calls for study of catastrophic scenarios."

Des Jardins went on to detail that the more catastrophic scenarios would imply that the State Water Project needs to reduce its GHG emissions footprint as soon as possible.

In this reporter's analysis, the Delta Tunnel is a project based on the illogical concept that diverting more water out of the Sacramento River and Delta estuary will somehow provide for the "coequal goals" of water supply and ecosystem restoration — being promoted during a time of increasingly dramatic impacts of climate change upon the state's water supplies. In fact, the best available science reveals that the Delta Tunnel will in fact hasten the extinction of [several fish species]. I don't know of any water diversion project in world or U.S. history where taking more water out of a river or estuary has restored that river or estuary. The Delta Tunnel project, if ever constructed, would be no different.

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BE HEARD

What: Public comment period for the Delta Conveyance Project Draft EIR When: Comment period: July 27, 2022 – October 27, 2022, by 5:00 p.m. Where:

- Review Online: www.deltaconveyanceproject.com
- Review In-Person: A digital copy of the Draft EIR is available at the following locations:
 - o DWR Office: 3500 Industrial Blvd., Room 117, West Sacramento, CA 95691
 - Libraries: A full list of libraries across the state where the public can access the Draft EIR can be found <u>here</u>

How:

Members of the public and other interested parties can submit comments on the Draft EIR in the following ways:

- Email: <u>deltaconveyancecomments@water.ca.gov</u>
- Online: www.deltaconveyanceproject.com
- U.S. Mail: CA Department of Water Resources, Attn: Delta Conveyance Office, P.O. Box 942836, Sacramento, CA 94236-0001
- Virtual Public Hearing: Provide verbal public comment at a virtual public hearing
 - Tuesday, September 13, 2022, 9:00 a.m. to 11:00 a.m.
 - Thursday, September 22, 2022, 12:00 p.m. to 2:00 p.m.
 - Wednesday, September 28, 2022, 5:30 p.m. to 7:30 p.m.

We got rid of the grass to help keep the planet green

CNN | September 7. 2022 | Christian Vescia, Opinion

Christian Vescia is an instructional designer for a San Francisco fintech company and an avid gardener. The views expressed here are his own. Read more opinion at CNN.

(CNN) - A few months ago, I said goodbye to the lawn in front of our house. In my city of San Carlos, California, a lot of people are modifying their landscaping to reduce water use and a lush carpet of grass -- while not quite a thing of the past -- is becoming less common. My wife and I wanted to do our part too, but weren't ready to implement a full-on xeriscape solution with succulents and desert plants.

Like a lot of places, we're facing the obvious impacts of climate change here in the San Francisco Bay Area. Over the Labor day weekend, a heat wave sent the thermometer up to a scorching 108 degrees, 20 or more degrees Fahrenheit above normal. We're also in the grip of another multiple-year drought. In fact, 2022 has been the driest year on record in California. Wildfires raging across the state are another reminder of just how severe that drought has become.

So as beautiful as a plush carpet of grass can be, we couldn't justify using the hundreds of gallons of water required to maintain the three lawns we have on our property: a front lawn, a back lawn and a third lawn on an upper terrace in our backyard.



Christian Vescia on his front lawn -- where the grass has been replaced with a low-water ground cover.

Our family has always been conscientious in our use of water: it affects how we take showers (short), do the dishes (not letting the water run and cascading rinse water into an adjacent pot to

re-use), and wash our produce (transporting water from washing lettuce and vegetables to water plants the garden).

Climate change is causing me and many of our neighbors to look for even more ways to conserve water. The next step for me, as an avid gardener, was to look for ways to save water in the garden -- starting with getting rid of most of our grass.

In some parts of California that have been even harder hit by drought than we have, residents are being paid by the square foot to remove their lawns. Even without that kind of rebate, some homeowners in my area are full on taking out the front yard, putting in succulents -- not just a low-water, but almost a no-water solution, putting in plants like cactus and agave. I wasn't convinced, however, that that would go well with the rest of our garden. We have a crabapple tree in the front and other evergreen shrubs and plants that come from the desert would look out of place together with those plants.

We decided to replace our front lawn with a low-water ground cover and remove our smaller back lawn entirely. In the back we installed a crushed gravel patio where we can have meals outside in the garden. We kept a moderate-sized lawn in place at the top of our backyard, where we like to sit in the evening on our own or with guests.

To be honest, removing the front lawn was not only about saving water. I'd also come to feel that maintaining a lawn was a hassle: I was tired of mowing it every other week. And, since I've never been a fan of the weed whacker, edging the lawn required getting down on my hands and knees with shears to give it a trim. I was happy to say goodbye to all of that.

My wife Lucia and I researched several different types of no-mow lawns that use different sorts of grasses. However, many of those didn't work very well with our existing landscaping. We also investigated drought-tolerant ground covers. Eventually, based on the suggestion of some friends -- one of whom used to work for a municipal water service -- we decided to plant a ground cover that originated in Asia, called kurapia that is drought tolerant and uses significantly less water than a traditional lawn -- as much as 80% less according to some studies.

I've read that kurapia roots eventually go down 5-10 feet, so it holds up well in a drought. It grows to about 2 to 3 inches tall, is nice and green and has attractive small white flowers. You can mow it if you'd like to encourage it to grow a little bit more densely, but that might be the kind of thing you do once or twice a year, if at all.

A lot of people don't like non-native plants, which they fear will become invasive and hard to eradicate where they're not wanted, but kurapia is sterile and has been germinated not to spread where it's not planted. We've had a lot of people asking about it as they stroll around the neighborhood. Most are looking for alternatives to maintaining a water-thirsty lawn or having a dead patch of ugly brown grass in front of their homes.

Making the switch from grass to this ground cover wasn't inexpensive. The plants needed for my 1,000 square-foot front yard cost around \$900 and my landscaper took a day or more to install them. However, we expect to recoup some of that expense by lowering our water bills as a

result of replacing or eliminating most of the lawns. Now that we've made the switch, I love the fact that I don't have to stalk back and forth across the lawn every two weeks behind a noisy mower. Most of all, I feel good about using less of our precious water resources.

It's important for all of us in the western United States to know where our water comes from. Once you do, you realize how we regularly have to make difficult tradeoffs between the three main uses of our water: agriculture, municipal water use and sustaining a healthy environment. Once you become aware of the limits of our supply, the critical importance of conservation stands out and it motivates you to look for new ways to reduce your water use.

Besides conserving water in the garden, we also do what we can in the house. We have a recirculation pump we turn on with a wireless remote before taking a shower that forces hot water through the pipes to our bathrooms. That way, we don't have to run gallons of water down the drain while we wait for the water to heat up. We take advantage of our county-level conservation programs too. For example, we made use of a \$300 rebate from the county to help replace our old washing machine with a modern, front-loading model that uses much less water. The rebate reduced the cost of the machine by nearly 30%. The new machine even weighs the laundry before the cycle to determine how much water is needed for the size of the load.

Between our nice, green, no-mow ground cover in the front, and our new gravel patio in the back, we're very happy with our new yards and reduced water use. For the back, we've ordered a nice, extendable outdoor table so we can eat outside.

Now that I'll soon be entering my retirement, one of the things I'm looking forward to is cooking big meals, having friends over and dining al fresco on my back patio of my garden -- now almost entirely free of grass.

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5 Ancient Societies that Collapsed When the Water Ran Dry

From Mesa Verde to the Mayans, these ancient societies collapsed without water. Discover | September 6, 2022 | Sara Novak

Climate change has forced a number of states across the nation to face growing water shortages. From California to Colorado and everywhere in between, droughts combined with growing populations are causing communities to worry about having enough water in the near future.

Countries across Africa, the Middle East and Asia are also particularly vulnerable to a growing drought crisis. But this isn't the first time a lack of water has negatively impacted society. Throughout our history, societies have been built and then collapsed around water. These ancient societies fell when the water ran dry.



1. Mesa Verde

(Credit:Sopotnicki/Shutterstock)

Mesa Verde was a bustling community of around 6,000 at its height — its people famously building multistory sandstone and mortar structures tucked into the sides of cliffs. The ancestral Pueblo people that lived there hunted big game and feasted on beans and corn. But around A.D. 1277, a 23-year drought began to ravage the community and by A.D. 1300, the Pueblo people abandoned Mesa Verde.

According to Scott Ortman, an associate professor of anthropology at the University of Colorado, around 30 percent of the population lived on land where you couldn't grow food due to the drought. Signs of a brutal conflict resulted and can be seen at various archeological sites — with decapitated bodies and skeletons mangled by war. "The drought caused pretty serious social strife, and the society basically blew up over it," he says.

2. The Akkadian Empire



(Credit:matrioshka/Shutterstock)

The Akkadian Empire is considered one of the first great empires. Centered around the city of Akkad, the empire stretched throughout the Middle East and lasted from 2350 – 2150 B.C. But according to a study published in Geology, drought caused its demise. "Archeological evidence has shown that this highly developed civilization collapsed abruptly, perhaps related to a shift to more arid conditions," say the study authors.

3. The Mayan Empire



(Credit:Bruce Raynor/Shutterstock)

The Mayan Empire grew out of the tropical lowlands of Mexico and Central America. They constructed dramatic stone structures and were skilled in the arts, agriculture and language. But by around 900 A.D., many of their great stone cities were abandoned. Researchers aren't entirely sure what went wrong, but they think drought could have played a role.

According to Takeshi Inomata, a professor of anthropology at the University of Arizona, society was already struggling as a result of social problems, warfare and administrative issues. Still, impending water shortages at the time likely made matters worse. "The drought may have come at the worst time because society was already vulnerable," he says.

4. Late Bronze Age



(Credit:Morphart Creation/Shutterstock)

Before its collapse in 1200 B.C., the eastern Mediterranean was home to a vibrant society centered around using bronze, which was stronger than other metals at that time. But according to a study published in PLOS One, researchers looking at radiocarbon dating in Syria and Cyprus found that the collapse of these sophisticated civilizations throughout Europe and the Middle East likely resulted partially from climatic shifts that caused water shortages. "This study shows that the Late Bronze Age crisis coincided with the onset of a 300-year drought event 3200 years ago. This climate shift caused crop failures, death and famine," write the authors.

5. The Tang Dynasty



(Credit:gyn9037/Shutterstock)

The Tang Dynasty, which lasted from A.D. 618 to 906, was considered a golden age for arts and culture in ancient China and a period of growth throughout the region. Known for peace and prosperity, this dynasty also saw the extension of overland trade with Syria and Rome via the Silk Road. But according to research from the National Science Foundation, extreme drought may have partially led to the decline of these dynasties due to poor grain harvests caused by a lack of water. "The researchers discovered that periods of weak summer monsoons coincided with the last years of the Tang, Yuan and Ming dynasties, which are known to have been times of popular unrest."

The collapse of society is often caused by several factors that come together with unfortunate timing. These once bustling societies are a good reminder that civilization is fragile and the impact of climate change has often been enough to topple what once seemed invincible.

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